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SCHOOL AND COLLEGE.

REFLECTIONS OF A TEACHER OF THE CLASSICS.

A RETROSPECT of twenty-five years over any part of the field of higher education is likely enough to give rise to gloomy and regretful thoughts. Yet it is to be hoped that elsewhere there is less to be discerned of fog and mist than along the track of the ancient classics, which seem to have been marked as chosen victims of human perversity and unreason in proportion as they stand high in the scale of humane culture. No other academic pursuit, it is to be hoped, has by its methods afforded such justification of enemies, such confutation of would-be friends, or has seen reform move forward so slowly or within such narrow limits, as the study of the Greek and Roman books. Perhaps, however, our charitable hope is but the self-deception of a restricted experience. Pedantry is a weed that thrives upon the most diverse soils. The lack of a sense of proportion, the confounding of means with ends, all the glorification of the unessential, — these shapes confront and baffle the friend of true learning, wherever his lines are cast.

The scholastic tendency to pursue purely accessory matters, as it were for their own sake, has reached down from its proper sphere of the university, and laid its withering hand upon the fresh years of the college and the school. Is it an influence of scholasticism, or some innate hebetude of spiritual vision, that renders the ordinary teacher so blind to the attractions of simple objective truth? Why does he prate to us about the philosophy of things before helping us to see clearly the things themselves? Why must he attempt to instruct us in the Latin

language as a science at a time when we need to learn it as an art? Why forget that the art involves the science, the substance the philosophy, while the converse of these propositions is by no means true? Only out of a regard for the concrete, an intense interest and burning curiosity to behold its clear and perfect form, does any genuine desire to speculate upon it grow. Nor is it to be regretted if the majority of young learners are never led to any considerable quest of the abstract at all. Unconscious cerebration is one of Nature's kindliest gifts. Who wants to do unnecessary thinking, any more than unnecessary labor with the hands? Furthermore, whence but from a love of that palpable embodiment of human thought and feeling known as literature ever came a true vocabulary, or any other sound and penetrating accuracy of detail? Literature and language, too often treated as distinct entities, but in reality inseparably wrought into each other's core and fibre. You may deal severally with the anatomy of the language and the history of the literature or *vice versa*, if you choose, but you still have not got soul and body apart. It is only a convenient superstition to imagine any such severance. A literature sundered from its proper language is at the best but a gibbering spectre. Similarly, there can be no such thing as inorganic grammar. That is your chemistry without a laboratory, geology without one excursion afield, astronomy without a glimpse of the starry heavens.

Andover, Cambridge, Ithaca. Even the last, thanks to the ancient wanderer, is a classic name. But it is to Andover, endeared to generations of American youth, that the most unsullied memories cling. I can well understand now with what zest my father removed from Beverly to the scene of his old schoolboy days for the sake of his sons. But it would be hard to describe the effect produced by the new scene upon the mind of an impressible and imaginative boy in his twelfth year. There wild Nature, ever lovelier than books, was at her loveliest; and there was the school, with its noble record running back immemorially, as it seemed then, into the past. The plan of the Classical Department at that time was a perfect one for such of its members as were ever to find a meaning in the

classics. Latin and Greek, pure and simple, through three years. There was a pretence of mathematics two half-days in the week, but as that had been well learnt beforehand in the English Department it could create no distraction. The systematic drill at the outset was hard and distasteful, but of this we had too little rather than too much. Moreover, practice in writing began early, and was assiduously prolonged. In Greek, the smaller Kühner's Grammar, every page of which had to be learned by heart, contained a copious series of exercises for writing, from the very beginning of the book. The sententious maxims stuck in the memory, and some of them are still ringing in our ears. Greek and Latin became living languages from the first, clear of the distorting medium of the vernacular. Finally came Vergil, — it seemed long to wait, — then Homer. For some reason the first recitation in the Iliad was held exceptionally in the evening. It was the last year, and we had now come under the instruction of Dr. Taylor himself. The Roman hexameter was familiar from Vergil. But there was something about the initiation by candle-light, apparently, that made those wonderful first lines of the Greek seem like a sudden revelation. The first sight of Homer, the first sound of Homer's voice! Never since has his scenery risen more vividly, never has his inimitable music echoed more majestically than on that night.

The third year, in "Number Nine," introduced a still higher phase of the saving virtue of concentration, in that one week was occupied with solid Latin, the next with solid Greek. The books were the Anabasis, the Iliad, the Æneid, Sallust's Catiline, and finally a rapid review of all the reading prescribed for admission to Yale. That constant repetition and review, which one of our sincerest Grecians has recently commended with just emphasis in the pages of this journal, was characteristic of the whole school, and especially of the thorough teacher whom we commemorate. It was this repetition and minute study, not any conscious effort, that caused so much of the sonorous Greek and Latin to print itself indelibly upon the memory. First, fables from the Latin Reader, then occasional chapters of

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Cicero's orations, passages from Vergil, and finally the whole of the first book of the Iliad (of this there was endless reviewing), we knew by heart and rehearsed aloud in our solitary excursions. Nor did the words fail to carry with them their perfect image and illusion. Sometimes it was the Forum, or the Italian shore; but oftener the sky of Hellas seemed to shine around Pomp's Pond and Sunset Rock, — Hellas radiant, restful, "shadowy mountains and the resounding sea." The prose of Xenophon, though studied with the same minuteness as that of the Roman orator, never impressed itself in the same way upon the memory; clearly, as we are disposed to believe now, because of its artistic and rhythmical inferiority to the Ciceronian rhetoric. On one occasion we selected for the regular declamation before the school an address of Xenophon to his ten-thousand Greeks, and Daniel Austin, our salutatorian, of sacred memory long since, chose a speech from Sallust. Austin's Latin went off beautifully. But our Greek — at just about the middle point we lost the clue. It was a critical moment; something must be done, and without hesitation we went straight back to the beginning, repeated the first half of the harangue, and brought it to a glorious conclusion at the mid-way mark. It was the chorus of flighty birds, to be sure, but a very scared and degenerate Peithetærus. There was a twinkle in the eye of "Uncle Sam" as he passed his criticisms, but he betrayed us not.

"The Taylorian method" has frequently been criticised as if it were pedantic, petty, and illiberal in spirit. In fact it was nothing of the sort. There was much, too much doubtless, of analysis; but it was analysis that dealt with the essential, special relations of the matter in hand; bearing steadily upon the concrete, and never degenerating into the weary humdrum of stereotyped and isolated formulas. Dr. Taylor's recitations were all alive, never dull for a moment. Of his method, that could be said which is the highest glory of a school, that it brought the men of insight, not the lesson-bibbers, to the front. What his teaching undertook to do it accomplished admirably. Its fault was in what it did not undertake at all. His pupils were required to give carefully prepared translations, after

models presented by himself. But there was no sight-work, as there should have been, side by side with this useful discipline, no reading aloud, no memorizing and reciting of texts required. To learn the languages by ear as living tongues, going by the sound, banishing and forgetting the vernacular — all that was left to take care of itself; although we know now, as we did not suspect then, that it is precisely this all-essential thing which cannot with safety be left entirely to itself. Two additional books of the Iliad had to be learnt privately by those of us who were to enter Harvard. The task was an easy one under the circumstances, but at least five books might have been repeatedly read aloud to the whole class (an audience of fifty souls) along with that searching drill upon the single book, to vitalize and illuminate the knowledge gained from it, to widen the view, stimulate the interest, and store up so much more of immortal minstrelsy thus early as a treasure for all time. In some such way ought each successive stage of the whole three years' course of study to have been supplemented. But those were shortcomings of the times, not of the man. The part he chose he nobly performed, and his name shall be revered accordingly.

The descent from Andover Phillips Academy in its palmiest days to Harvard College in the last years of its obsolescent Procrustean *régime* was a tumble such as only the eternal buoyancy of youth could have endured with equanimity. The system of prescribed studies then obtaining has been so effectively sketched by Professor Goodwin in his instructive *Phi Beta Kappa* address as to need no further comment. First, a dogma denying the natural inequality of men, then the deification of mediocrity. Where all are driven like swine to a common trough, must not of necessity the rich provender be trampled in the mire? With that period begins the melancholy portion of our reminiscence — melancholy not indeed on personal grounds, but in the name of humanity and common-sense. For ourselves, the vexations were transitory, the loss had its compensations. The elective system was in the air perhaps; at any rate we were suffered to run riot in a diminutive one of our

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own creating. Having nothing to do was not unfavorable to that spirit of repose which is deemed essential to scholarship. Of the Latin after the first year, what little there was, it is possible to speak with respect and gratitude. But in Greek our class was handed over to the tender mercies of an ogre. If Professor Sophocles was a very Homeric man, as Professor Palmer thinks, then let us pray that as few Homeric men as possible may be set to teaching Homer. What could the aspiring student extract from that seedy bundle of cynical, soulless erudition? Yet he, the slayer of enthusiasm, could not prevent Plato's Apology of Socrates, the Seven against Thebes, and the divine Alcestis from becoming permanent possessions then and there. To such tests of their vitality have the classics been subjected in the past, and must continue doubtless to be subjected in the future.

The recollection of four years passed as tutor, partly under the old and partly under a new *régime*, is suggestive of the slowness with which even a rebellious spirit emancipates itself from the shackles of tradition. One is moved to take to himself the Promethean taunt, "Like some poor physician, falling sick thou art faint-hearted and at a loss to discover by means of what drugs thine own malady is curable." Truly the powers of darkness are dislodged only by slow degrees from their strongholds, even when these have been planted upon uncongenial ground. But it was a high privilege to assist at the first beginnings of their downfall. Taking final leave of Cambridge was equivalent to taking final leave of academic freedom, at least on American soil.

What Harvard undergraduate days had been in their reposeful senility, even such was the idyllic freshness of the Arcadian period at Cornell, along in the seventies, when the loose ends of things dangled sweetly overhead, like waters of Taghanic glen that fade in mist before they reach the bottom of the fall. The memories of the modern Ithaca are not classic, but romantic. Our present desire, however, is to record briefly the convictions due to an extended experience of the system of multiplied and meaningless academic degrees and courses, by whom originally devised we know not, which has firmly intrenched itself in some

of our State universities and other prominent institutions of learning. Its history has demonstrated what might have been foreseen, that there can be no compromise between slavery and freedom. The classics gained nothing whatever from it. By reducing the absolute number of students of Latin and Greek it brought to the foredoomed system, which it was intended to supplant, a temporary reprieve at the cost of a wholesale inroad upon the traditional elementary basis of liberal culture, and left us just as far as ever from anything like natural selection at the close of the preparatory period. Moreover, during two of the best years of the student's life, the first two in college, it still allows him to be crowded with a greater number of studies than can all be thoughtfully attended to at one time, and thus by implication prompts the average man or woman, who has no particular likes or dislikes, to make an unwise use of the free election granted during the last two years. The elective system, the outcome of a deep-seated indignation, was intended to do away with this deliberate waste of intellectual effort and dispersion of energy, and to render some wholesome concentration possible in studies pertaining strictly to the higher education. It declared that unreflective, superficial, slovenly performance of multifarious tasks is a disgrace and an injury to young people who have left the schoolboy period behind them. Yet there are institutions, professing to be more advanced than high-schools, whose prescribed courses are models of mental dissipation.

In vain we argued, importuned, and prayed (after years of trial had demonstrated anew the injustice and folly of the existing scheme) that at least the second year's Greek might be set free. The only alternative was the old miserable makeshift of a division of classes according to qualification — simple justice to the upper section, an atrocity to the lower. A partial account of the example of one class, late in our sojourn, may be of interest from a statistical point of view, though presenting nothing particularly new or noteworthy in itself. An examination in Greek of accepted candidates for admission was held for the purpose of awarding certain scholarships, and at the same time of determining the contemplated division into an upper

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and a lower section. The examination was wholly upon sight-work, the only real test of proficiency. An easy page of the Cyropædeia of Xenophon, previously unseen, was set for translation, followed by a bit of plain connected English based upon the Xenophontic passage, to be turned into Greek. The result, in brief, was the selection of six out of about twenty candidates, and, finally, after two persons had voluntarily withdrawn, a class of four, two boys and two girls. They had not expected an examination of the sort described, and with the exception of one of the boys, who happened to be from Andover, they had not enjoyed superior advantages of preparatory training. But native good sense and fair abilities, together with a well-directed diligence, had enabled them to assimilate the little they had learned, and to acquire what ought to be unconditionally demanded for admission to any Greek class of collegiate grade, a *working* knowledge of the elements. With that little class (would it might have been larger!) it was possible to accomplish during their first year some tangible results not unworthy of so valuable a period, considering the excessive number of studies required at the time. Ten books of the Odyssey were read in one of the three terms, three hours weekly. A passage of about ten lines having been assigned for close study, oral practice, and to some extent for memorizing, when this had been disposed of at the beginning of the recitation hour, a hundred or more additional lines would be carefully read aloud to the class, and for the most part also translated. The whole was afterward reviewed privately by the student, and he was expected also to anticipate the prelections by rapid reading. Most of those hours were shared by one or two visitors, who had previously read another part of the Odyssey in the same way. Nobody cared to talk *about* Homer, for Homer was there to speak for himself.

We cannot believe that our plea for objectivity is wholly gratuitous, notwithstanding the advance which has been made of late years toward viewing classical studies in the light of common-sense. That advance has not yet reached all the outposts of the enemy. With the university, properly so called, we are not concerned; but in the school and the college, which

exist for culture not for erudition, there still lingers a disposition to take hold "at the wrong end, at the end which Nature does not offer." There is still too much of the spirit of pedagogy abroad, too much time is still spent in chasing the *ignis fatuus* of "mental discipline" over we know not what bogs and quagmires of dreary quibbling conceit. There is too much of commentary and too little of text, by far. It would be well, too, if we might finally cease discussing the comparative value of methods, as if "the old way" and "the new way" were mutually exclusive, and not both indispensable, so far as either of them is good. The end in view, the sole explicit purpose that can be rationally or morally justified, is a healthy natural enjoyment of the great creations of the antique. Without close study, minute, searching, microscopic as it were, directed upon a few characteristic specimens of the classic works, there can be no insight into the ancient workman's patient elaboration, no sympathy with the artist's instinctive fondness for perfection of detail. Without rapid reading, early begun and never intermitted, over both old ground and new, the language does not become alive, and the soaring enthusiasm of the theme is missed. Both processes are needful for the gradual mastery and assimilation of an exhaustless horde of realities, concrete facts,—facts linguistic, historical, archæological, artistic. These are sources of light, to be steadily admitted from all sides to illuminate the central figure, but the highway must not be abandoned for the sake of exploring them. Every author should be dealt with primarily according to his own spirit, Cæsar as strategist, Herodotus as the prince of story-tellers. If you allow yourself to interpret Demosthenes as a historian and not as an orator, Lucretius as a grammarian and not as a great reflective poet, you are a false guide, likely to mar the young learner's sense of proportion, distort his conception of the truth, and engender in him a baseless conceit. The ordinary student, under existing conditions, is only too ready to accept a stone in the place of bread.

The prescribed system weighs down with crushing force upon the precious years of early collegiate instruction, as if an atone-

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ment for some fatal transgression in the past. Like the hereditary curse of ancient tragedy, it has engendered a dark brood of ills persistently haunting our academic halls. It is responsible for the existence of teachers without power or any sincere regard for the subjects which they profess to teach, of students who can offer no rational motive for study, and of a complicated, inflexible, interlocked curriculum that concedes to no single group of homogeneous studies the time needed for their intelligent pursuit, and permits no one department to act independently in excluding the deadweight of unqualified and indifferent members. In the classics the paternal system has proved alike subversive of enthusiasm, progress, and opportunity. The first two years in college should give to every student of Latin who elects to pursue the subject beyond the elementary stages, after proving himself duly qualified for such election, not only a firm practical grasp of the language, but a more intimate familiarity than is common now with the spirit and contents of the books usually read. At the end of the same period the few who have also chosen Greek might easily be well and honestly versed in Homer, Herodotus, Euripides, and initiated in the remaining dramatic poets, the Attic orators, and Plato. It should be remembered that some of those who have thus far pursued the classics may desire to give their time thenceforward to other subjects: shall they not, then, look back to the days graced by the manifest presence of the great spirits of antiquity as to the golden age of their intellectual life? The elective system is sometimes criticised as if it were intended to encourage premature specialization. To accuse young people of specializing the moment they are enabled to devote thoughtful attention for the time being to some congenial line of study is a gross slander. Free election of studies is not meant to train up a race of specialists (heaven forbid!), but cultivated, serene, open-minded men and women, — happy in the Socratic wisdom, content to pluck patiently and reverently their modest portion of the equally beneficent fruits of the tree of knowledge, each in its own good time and season.

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MATHEMATICS AS A PART OF A COURSE OF LIBERAL CULTURE.

THERE are two great objects of a course of liberal culture, namely, first, to give useful information, and, second, to give discipline, training, culture. Of these two objects, the second is by far the most important. The materials which shall constitute a building are of course valuable, but the power which designs the building, selects, adapts, and combines the materials, is more valuable still. Knowledge is said to be power, but it is only that knowledge which has been completely appropriated and made available to great ends by a disciplined mind that is power. Discipline, training, is valuable *per se*. It transforms the mind into a higher order of mind. It is valuable everywhere and at all times.

In order to determine the value of Mathematics as a part of a course of liberal culture, we must know how it helps to the accomplishment of these two objects. What useful knowledge, then, does the Mathematics give? It is the science which investigates the relations of quantities. It does this mainly by determining positions, measuring magnitudes, and by permanently registering the results of its investigations by means of numbers, and by means of formulas which are the expressions of laws connecting numbers.

Many of the laws which govern the order of nature are laws connecting quantities. Wherever in nature Mathematics finds a quantity, she seeks to measure it and to register its measurement. She expects to find laws connecting these quantities, and she seeks for them. Every law thus found is a law of the phenomena of which these quantities are properties, and every law of these phenomena is a law governing a part of the order of nature. For instance, having learned to measure distances and forces, she finds a certain law connecting the attrac-

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tion of the sun upon a planet with its distance from the planet, namely, that the attraction of the sun upon a planet always decreases as the square of the distance increases. Again, she finds a certain law connecting the distance the moon falls towards the earth with the time it is moving, namely, that it always falls .05 of an inch in a second of time. She also finds another law connecting the force with which the earth attracts a stone towards itself with the distance of the stone from the earth. From these two she deduces a third law, namely, that the earth attracts the moon with a force which decreases as the square of the distance between the two increases. She finds a similar law connecting the attraction of a planet upon another with the distance between them. Thus she finds that the same law governs the attraction of the sun upon a planet, of a planet upon another planet, and of a planet upon its satellites. By combining these and other similar laws, she at last reaches one of the most universal and important of all the laws found in the whole order of nature, namely, that every particle of matter in the universe attracts every other particle of matter in the universe with a force which decreases as the square of the distance between them increases

And so the Mathematics goes on measuring quantities wherever she finds them and registering her results, comparing one quantity or its measurement with another and finding laws connecting them, combining these laws with each other so as to find more general laws, and explaining laws by showing how they are included in more general ones, or are the consequences of others. Her object is to discover and explain all the laws of all phenomena which are consequent upon position or magnitude. In doing this she takes a very large and noble part in explaining the order of nature. Her domain is as wide as the universe. With an ambition as noble as it is audacious she seeks to explore the farthest reaches of space, to determine the position, measure the magnitude, determine the motion and measure the mass of the faintest star in the sky and of each of them. Having had fair success in her attempt to determine the age of our sun, and its future duration, she even hopes to do the same for stars

whose distances dizzy the imagination. Therefore if any one would hold high converse with the grandest works of an omnipotent Creator, he must acquaint himself at least with the elements of Celestial Mechanics. These alone can explain to him the most magnificent phenomena of the physical universe, and the sublime design after which God has constructed it. It was a noble thought of Plato's, that God geometrizes continually. The study of this geometry enlarges, elevates, and purifies the mind and fills it with reverence, which is the foundation of humility and righteousness. But not only is it man's ambition and hope to comprehend the magnitude and extent, the magnificence and sublimity, of the physical universe, but an intelligent curiosity impels him to scrutinize the minute, the secret, the subtle phenomena of nature. Here again the theories of Electricity, Magnetism, Light and Heat all have their mathematical side. Both in the investigations now being prosecuted in these subjects and in the exposition of what has already been learned of them, Mathematics gives efficient and essential aid. Treatises on these subjects designed not for experts alone bristle with symbols of differentiation and integration. It is getting to be impossible to have an independent opinion on these subjects without a knowledge of the Calculus.

Moreover, it is necessary to man's greatest comfort and physical well-being that he know, subdue, and use, as far as possible, all the forces of nature. Therefore he has sought out ways of measuring forces and of velocities and accelerations which are the effects of forces, and has thus built up the sciences of Kinematics, Statics, and Dynamics. The useful applications of these sciences are visible all around us in the construction of edifices, bridges, railways, ships, and in the thousands of machines used in making the forces of nature do man's work for him. Again, Astronomy gives man the rules by which he sails his ships, and time, by which he regulates not only his railway trains but almost all the public and domestic affairs of his life. The conduct of the commerce and intercourse of nations would still be near barbarism but for the help of the mathematical sciences.

If these views be correct, a mere statement of them shows that for their utility alone, that is, for their application to what are called the useful arts, they ought to form a considerable part of the store of knowledge of every liberally educated man.

But Mathematics has a higher utility than this. It is the best known training for what Mr. Mill and Mr. Jevons call the deductive method of scientific inquiry.

The most familiar illustration of this method is the following: First, Newton reached the hypothesis that it is the earth's attraction that holds the moon in its orbit. Second, he then showed that if this were so then the moon must fall towards the earth .05 of an inch every second. Third, he then went to work to find how far it actually does fall towards the earth in a second, and found that its fall is just .05 of an inch. He concluded, therefore, that it is the earth's attraction that holds the moon in its orbit.

The illustration shows that the method proceeds by three steps. The first step is the formation of an hypothesis which may only be an intelligent guess suggested by analogy or some slight evidence. The second step is a train of deductive reasoning based upon this hypothesis, often mathematical and sometimes exceedingly difficult, leading to some necessary consequence of the hypothesis. The third step is a verification of the result by application to some suitable phenomena in nature.

Another simple illustration of the method is the following: The hypothesis was reached that it is the weight of the air which supports the column of mercury in a glass tube. It was next seen that if this were so then the mercury must fall if taken to the top of a high mountain. It was then taken to the top of a mountain and the mercury fell, as predicted. The conclusion was inevitable that it is the weight of the air which supports the mercury in the tube.

Concerning the great value of this method Mr. Mill says, "This method is destined irrevocably to predominate in scientific investigations from this time forwards. Deduction is the great

scientific work of the present and the future." Hence while the wonderful utility of the Mathematics challenges our admiration in the great mechanical industries all about us, yet its chief utility is not in the matter it teaches, but in its method. Mr. Mill says, "Mathematics will ever remain the most perfect type of the deductive method in general, and the applications of Mathematics to Physics furnish the only school in which the philosopher can effectually learn the most difficult and important part of his art, — the employment of the laws of simpler phenomena for explaining and predicting those of the most complex."

But far more valuable than this useful information is the mental discipline and power which the Mathematics gives. We are not among those who claim that the Mathematics the greatest of all means of mental training, but we do believe that it trains the mind to certain habits, and gives it a certain power better than any other means, and that there is a kind of training given by it which can be got from the study of no other science.

In the recitations of a class in Algebra we may recognize two distinct kinds of work at least. One is done when the pupil is demonstrating theorems or rules, the other when he is solving the abstract examples given for practice. The first kind of work is largely deductive reasoning; the latter appears to be quite mechanical in its nature. In a recitation of a demonstration properly conducted, the student is required to state the theorem to be proved, often the plan to be pursued in proving it, give the arguments which make up the demonstration in their proper logical order, and draw his conclusion, — all to be done facing the class, and in clear, accurate, and forcible language, and in the spirit of one who has a valuable thought which he wishes to persuade others is true. Here then we have training in the correct and effective use of language, in deductive reasoning, both conditional and unconditional, and in the proper logical and rhetorical arrangement of ideas. It is work similar to that done by the lawyer when arguing his case before the Court, to that done by the minister when trying to convince

his people that the doctrines he teaches are true, to that done by the statesman when trying to convince his colleagues of the reasonable and beneficent grounds for enacting the new law. Some of these demonstrations look like perfect models of arguments, and properly conducted recitations on them seem to be the best possible exercises in clearness of statement and logical argumentation. It would seem to be impossible to put the student intelligently through them without his markedly increasing his power of clear, accurate, and forcible expression as well as his skill and power of reasoning. In an abstract example, however, although the thinking may sometimes be given the form of deductive reasoning, yet it is quite mechanical compared with that of Geometry. We sometimes feel as though a machine might be made to do the work with less possibility of error than there is in ourselves. It is not a rare thing to find students with much skill in this mechanical manipulation of symbols who are very weak in the work of demonstration. It is to be feared that there is more attention paid to this second kind of work in some quarters than to the first, and that in consequence the pupils lose the best part of the training that their Mathematics ought to give them. Especially do we think it is this second kind of work that is in mind when we hear people disparaging the training given by Mathematics.

But of course the best of all the training given by Mathematics is that given by Geometry. A careful analysis of the thinking done in demonstrating the Pythagorean theorem by the usual method shows, first, that there is a considerable exercise of the power of invention. New lines have to be drawn which shall divide the figure into new parts having relations to each other and to the parts of the original figure so that by means of these several relations the parts of the original figure may be compared with each other. Second, there is a much more frequent exercise of the power of holding in mind clearly and at one time several different concepts, and, what is more difficult still, of holding in mind at one time several different relations between concepts. Third, there is an exercise of the power of comparing these several concepts and their rela-

tions so as to discover new relations between them. Fourth, there is an exercise of the power of recalling the proper general proposition of which a given statement may be a particular case and drawing the proper inference from these premises. Fifth, there is an exercise of the power of concatenating one syllogism with another until long and parallel trains of reasoning are constructed whose conclusions are to be compared with each other and from which other conclusions are to be drawn.

From this analysis we conclude that the original working out of such a demonstration must train the student's powers of invention, conception, and judgment, and his powers of deductive reasoning. It trains the latter as no other study can. When the time for recitation arrives the student is required to write on the blackboard the theorem he intends to prove in accurate, clear, terse, and correct language. Then he must draw a clear and correct figure showing all the parts treated in the demonstration. He must apply the theorem to the figure showing what is given and what is to be proved. He is required to define or explain every term of the theorem until there is left neither vagueness nor ambiguity in its statement. He is required to show that every line which he wishes to draw can be drawn. He must never be allowed to assume as possible what a close scrutiny will show to be impossible. He must state in their logical order all the steps which lead to the conclusion. Every statement in his argument must be challenged, and he must be compelled to fortify it by postulate, axiom, or previously proved theorem. He must never be allowed to hold that he has proved a general theorem when his demonstration has only proved a particular case of that theorem. And thus he must be compelled to make every step that he takes in his demonstration perfectly clear and absolutely certain, so that when he reaches his conclusion he and his auditors shall feel that though the heavens fall their belief in the truth of this theorem shall never waver. The student that works out such a demonstration knowing that this ordeal must be passed at the hands of a class of very eager and very critical students, led by an alert and intelligent "objector," will examine with the keenest discrimi-

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nation at his command the meanings of the words he uses and with his soundest judgment the grounds upon which he bases his statements, and will so choose his forms of expression and so marshal the parts of his argument that, if it is possible, conviction of the truth of his proposition shall be inevitable. What better means is it possible to devise for training the critical powers of youth? When this demonstration is delivered, like those of the Algebra, to which we have already alluded, in the spirit of one who is bent upon producing conviction in the minds of his hearers, we have again a most excellent exercise in training for public speaking.

And all this training comes in just at the proper stage of the youth's development. The youngster kicking and cooing in his crib is finding out that the foot that flits about so vigorously is not the fist that he sucks so voraciously, and that neither of them is himself, though a few painful experiences of bumps against the side of his crib soon teach him that they have a very close connection with himself. Soon he can clearly discriminate fist from foot, and then crib and chair, and wall and window, as distinct, separate objects. His powers of discrimination grow with the number of objects observed. By and by he recognizes an object as one that he has seen before and memory begins to shed a faint light upon the world about him. Observation and memory are the powers he most uses in early childhood. The abundant store of materials furnished by these affords ample materials for combination into new forms, and the boy soon begins to build houses, bridges, and railroads of blocks and bricks and books. He begins also to compose little domestic comedies and tragedies whose *dramatis personæ* are the members of his own family, their friends, and his playmates. Now fairy-land enchants him, and, if he is a strong, brave boy, daring adventures and the noble needs of brave men fascinate him. He weaves thrilling romances whose hero is always the same brave boy. A healthy imagination makes his boyhood an unspeakable joy while it lasts and the brightest, sweetest memory of his old age.

The youth has already begun to draw inferences and to look

for the reasons of things. His insistent "why" has become a dread to his family and especially to his father. But the dawn of reason has arrived and the father sees in his boy the promise and potency of a man. But alas, alas for human reasoning! The youth has drawn his conclusions from insufficient data and has fallen into disaster. With head bent and eyes upon the ground, he begins to reflect, to look back over his thinking to see, if possible, where he has blundered. At last his powers of reflection have appeared, whose complete development is the very consummation of his intellectual life. Few of the race ever come to an habitual and effective use of their reasoning and critical faculties. Now, when his reasoning and critical faculties begin to act, the boy should be put to his Geometry. It will give him the best possible material available at his age for exercising these faculties. The recitations in Geometry conducted by a skilful teacher will beget in him the habit and power of forming clear, exact, and true conceptions, of distinguishing clearly between hypothesis and conclusion, between what is known and what is required to be proved, of determining whether his statements are supported by proper and sufficient proof, and of holding tenaciously to a train of thought until he has reached its conclusion. They will beget in him the habit and power of carefully, intelligently, and skilfully examining his own and others' thinking, which is the highest function of the human intellect.

Now, while it is true that this training is best obtained from the purely geometrical sciences, like Euclid and the Geometrical Conics, yet it is not confined to them alone. The recitations in Analytical Geometry may be, and, it is feared, too often are, exercises in the mere mechanical manipulation of mathematical symbols, yet they need not necessarily be such. Every letter of the equation obtained by a demonstration in Analytical Geometry is the representative of an element in a geometrical figure, and every modification of the equation corresponds to some change in the properties or form of the figure. The student should never be allowed to use an equation unless he can completely and properly interpret it by giving the proper

geometrical meaning of every letter in it and by drawing the geometrical figure of which it is the analytical representative. Every change in the form of the equation should, as far as possible, be accompanied by an explanation of the corresponding change in the form and properties of the geometrical figure. In very many cases, if not all, this is quite possible. The demonstrations may often be cast in the same form as those of Elementary Geometry, and the same training obtained from them as is obtained from the study of Euclid. When proper attention is thus given to the complete interpretation of the equations and to the form in which the demonstrations are cast, the recitations in Analytical Geometry cease to be the dry and spiritless drudgery devoid of training and interest that they otherwise are.

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THE LABORATORY IN THE SCHOOL.

THE proper aim of science teaching is to train to accurate observation followed by correct reasoning from the data so obtained. Other things may be associated with this, but they are subordinate: this is primary and essential. To develop power should ever be the first aim of the educator. Other things may at times be neglected or ignored, but this, never. So the pupil in the school studying any branch of science must acquire the power to observe and the ability to reason. Every experiment performed, every phenomenon watched, every organism studied, must do something towards developing power. Hence science can be studied only in the laboratory, a place of work where induction is supreme. Here phenomena are observed singly. They are then compared and classified, and in due time each pupil advances for himself to the great laws which determine the phenomena in question and all kindred phenomena.

It must be remembered that science can be taught only by specialists. Its methods demand habits of mind distinctively its own. The classics have long been deemed worthy of specialists, while science has been made only a by-play of teachers interested in other lines. It has naturally followed that training in science has been denied any educational value; the sciences have been degraded as "bread-and-butter studies," with most deplorable results. The cause has rested in applying to science the same methods that years of experience have shown to be suited to language teaching. But the specialist in science teaches science by its own appropriate methods.

Direct instruction in science has usually been postponed until late in the course of study. The high school, or the last year in the grammar school, has seen the first elementary work in this line for students not looking forward to the college.

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Classical students have usually postponed all science work to the college course. But the child develops the power of observation as early as any, perhaps first of all, and this power should be trained as well as the others. So instruction in science by proper methods must begin in the primary school and continue through the entire course. Small children are interested in what they can see and handle. The phenomena of nature early attract their attention, particularly those pertaining to life. The wise teacher directs this general tendency. The next revolution in education will follow the direction indicated by the resolutions of the college presidents at Providence last fall. The time now given to arithmetic and geography in elementary education, with so little profit, will be greatly diminished, and the hours so secured will be given to subjects that train the observing powers.

Two classes of students are found in the secondary schools that demand somewhat different subordinate aims in their instruction. The first consists of pupils not planning to supplement their course by the college or the professional school. They expect to enter business, to devote themselves to mercantile pursuits in the marts of trade, to put their hands to some mechanical industry, to become farmers or stock-raisers; in short, they have entered the secondary school as a preparation for the business of life. Their instructor must keep this in mind and bend his instruction to it, so far as can be done without loss of power. The work of the laboratory must present the facts with which the pupil will deal in after-life. The pupil who plans to become a carpenter and builder, when experimenting in the laboratory upon deflection of beams and the load which they will carry with safety, should use wooden beams, and so be made practically familiar with their special properties while he determines the laws which fix the strength of all beams. But his companion who plans to be a machinist and to work in iron and steel should use iron and steel beams for the same determination. And so the boy who expects to work a farm should, in his study of insect life, examine and become familiar with the habits of those insects which will aid him in

the growth of his crops, or prove injurious to vegetation. He will then understand why the bumble-bee alone can fertilize the red clover, and will never ascribe the injury done to ripening grapes by ants to the honey-bee, as so many now do, in their ignorance. Similar careful selection of facts and subjects should extend through the whole course.

The second class has no immediate practical purpose in view. They plan for a more extended course of study, and they have usually no very definite aim in their work except general culture. Their instructor needs to look only to giving them the best training possible. They will certainly acquire many facts that they will use later, but this is incidental, and work with direct reference to the facts that they will need for use, such as the chemistry of remedies, may be left for a later period. Only when the instructor can choose between phenomena that lead to the same law does he need to consider whether the phenomena selected admit of a practical application, and then he should always select the practical.

Demanding, as they do, somewhat different treatment, whenever practicable, these two classes should be taught in separate divisions. When circumstances compel instruction in common, the needs of the first class should determine the work selected.

The laboratory itself requires careful arrangement. It need not be very costly, but it should be properly located, and then every appliance should be suited to work. So far as practicable, separate rooms should be given to the different sciences. But this is incidental. The only essential is that costly pieces of apparatus must be protected from corroding gases.

In arranging a laboratory for biological work, (botany and zoology,) a room should be chosen with good light, and it should be furnished with working tables for each student. The best table is made of pine and is entirely unfinished, is two feet and three inches in height, and is furnished with drawers in which the students can keep their dissecting instruments and other conveniences. There must be at least one drawer for each student, and when different divisions use the same room at different hours, it is specially important that no key will open

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another student's drawer. The height given allows a student to examine and to dissect a specimen readily while seated, and to view any part under the microscope without rising. Furnish a case for keeping microscopes and reference books, a second for preserving specimens for study, and a sink with an abundance of running water, and the laboratory is complete.

The school should furnish a few good compound microscopes, and there ought to be a microtome for cutting thin sections. A microscope for each student is convenient, but one for each group of three or four is all that is essential. The principal work of the student is to observe carefully the larger and more obvious features of plants and animals. Most of these are apparent to the naked eye; and a pocket lens, which each student should provide for himself and carry with him for constant use, will reveal as much as the ordinary student can master. Hence for school work there is little use for the microscope.

The students must provide themselves with the essential dissecting instruments, and a dissecting tray when studying soft-bodied animals, like mollusks. The dissecting tools are a strong knife for hard work, like removing the shells of bivalves, a small keen knife for minute dissections, a pair of scissors, tweezers, and a quantity of pins for fastening specimens. The best dissecting tray is a shallow glass dish with a cake of paraffine inside, because it allows the student to look at the floating parts, like the gills of lamellibranchs, through its sides. A common tin baking-pan with a pine board in it does very well for common work.

The materials for study in a biological laboratory must be determined by the habits of the instructor and the surroundings of the school. So far as possible, the animals and plants studied should be collected by the pupils themselves. Though the work may not be quite as systematic as though the instructor collected the material, the training is greater. Besides, by studying the object where it lives, the student often discovers minutiæ of life and habit for himself that train to the scientific method of work. The result is special power. And in much the same way the teacher's own taste will determine the features

which he will make the basis of comparison. Thus in botany, one teacher will direct his pupils to give special attention to the form and arrangement of the leaves; another, to the parts of the flower; while a third will invite to the examination of the relation between the leaf and the flower; and all will stimulate equally to true observation. The instructor must always aim definitely and persistently to develop the ability in every pupil to compare and to classify for himself. Carefully keeping a note-book that is examined and criticised by the teacher aids much in securing this, though the note-book must always be an aid to the work, never an end in itself.

Perhaps some teacher may ask just how to conduct a laboratory exercise upon this plan. Two things must be remembered: an exercise after pupils have acquired some power for themselves should be very different from one at the beginning; and, again, the proper study of a plant can be made much more easily than that of an animal.

A plant should be furnished for the first exercise, and a specimen should be given to each pupil. The pupils should then be directed to examine it, and to find out all they can about it, keeping notes. No questions should be asked the pupils, but they should be left to themselves and each one held to his own work. Ten or fifteen minutes may well be spent in this way, the instructor passing around among his class noting the work, and when he finds a pupil attempting to determine a point in an awkward way, suggesting a better plan. He must scrupulously refrain from suggesting to the pupils what to find; he must only aid each one in his search for those features that have already attracted his attention, tempting though it may be to do his work for him for the sake of helping him along. This work may be allowed to go on until a part of the class seems to be done with the examination. Usually ten or fifteen minutes will make a considerable portion of the class believe that they have mastered the plant.

Now is the time to show the pupils where they are. Let the teacher stop his suggestions, turn to some one of the class and ask him to tell what he has seen, stating it orally, either using

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his notes or not as he please. At almost the first word, he will see some one of the idlers seize his plant, and with flashing eye look at it earnestly and intently. Another and another will do this as he proceeds. It means that they have not noticed the feature mentioned, and so do not quite understand what is meant, but they are determined to find out. When the first pupil is through, let another do this, and another, just so long as new stimulus is furnished or the time is all used. After a few have stated their observations, the plan may be varied by omitting all features previously mentioned.

This method combines a certain amount of recitation with table work. Recitation is certainly necessary for the young pupil, particularly when beginning such work. Without it, accuracy is not secured. But this plan places the recitation upon the pupil's own work, not upon a set amount of text previously studied. And this combined method is practical also with advanced pupils. The principal modification should be made in giving the different pupils work according to their special tastes, and in drawing attention to the more important features, neglecting those that are secondary. Besides, some care should be taken that these more advanced pupils plan their work so as to examine specimens of as many genera as possible, noting carefully their differences, thus leading forward to classification.

Besides the biological sciences, the two important physical sciences should find a place in all schools. They demand the laboratory equally, and they can not be properly taught otherwise. Some schools put them together in one room. This is false economy because so many gases injure delicate apparatus.

The physical laboratory demands abundance of light. If possible, it should be a room with a southern exposure; otherwise an eastern or western exposure must be substituted. Experiments in light demand a beam of sunlight brought in by a mirror mounted as a heliostat, and many other experiments require careful reading. Tables should be provided for each student of about the same character as those used in biology, but of two heights, a part adapted to do work sitting,

the others standing. Each requires a Bunsen gas burner; or, if gas is wanting, an alcohol lamp with a sheet-iron chimney cut in points at the bottom to increase the draught.

In arranging the work of the physical laboratory, so far as possible, the pieces of apparatus should be placed upon the table and kept there until *all* the pupils have performed the experiments for which they are designed, and then these should be replaced by other pieces. This is easily done, provided the tables are numbered in regular order, by giving each student a card as he enters with numbers on it corresponding to the tables where he is to work for the day. He can then find his place without disturbance.

The experiments selected for the physical laboratory should be as simple as possible, yet they should show the pupils clearly how experiments teach new facts. It is well to make the first two or three teach some general law, such as Newton's First Law of Motion. All students should be taught to cut and to bend glass tubing at the outset, and an experiment that can be performed simultaneously, that involves this, is well adapted for the beginning, such as demonstrating impenetrability by attempting to pour water into a flask with no escape for the air. Making a thistle tube from a glass funnel, a straight piece of tubing that passes through the cork of the flask and extends nearly to the bottom, and a short piece of rubber tubing as a connector, affords an opportunity for cutting the tubing and softening the ends in the flame. When the pupils see that the water can not enter until the air has a means of escape, the same flask can have a bent tube added to pass into a dish of water, when the escaping air rises in a series of bubbles. The two experiments suggest impenetrability as an hypothesis. The suggestion may be confirmed and the law demonstrated by adding shot or sand in place of water, and finding the same escape of air.

There is some difference of opinion upon the wisdom of keeping all pupils at work upon the same topics at the same time. A class, indeed, makes a much more impressive appearance when this is done. A visitor may be pleased to see twenty-five

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or thirty boys weigh lead balls together, plunge them into water in unison and weigh them again, and finally find the same resulting specific gravity to three places of decimals. But automatism is not science. It is far better, after a few exercises, to have each pupil do his own work, regardless of the work of his neighbor, using so much time as may be necessary, and when he has completed it he should pass to some new investigation. This plan also economizes the apparatus.

The chemical laboratory should be equipped very much like the others, except that the tables should be about twenty-eight inches high, and should afford each pupil ample room. Each pupil should have his own ringstand and Bunsen burner or alcohol lamp. If general chemistry is to be followed by qualitative analysis, two pine shelves with room for twenty-four reagent bottles must be added. These can be set in the middle and open on both sides. A double set of labels allows two students to use the bottles conveniently and to keep them in their proper places.

The experiments selected should be simple, and each student should do his work for himself with no regard to his neighbors. No experiments should be introduced that involve any danger. Gases should be made in small quantities only, and when any one is dangerous to inhale, like chlorine, it should be made and experimented with under a hood. Each pupil should have a drawer or closet with lock and key in which he can keep his own apparatus. With a proper selection of the experiments, all the laws of chemistry can be determined with no special risk to the careful pupil.

One caution should be borne in mind in all laboratory work, especially at its beginning: the exercises must not be too long. Three quarters of an hour is fully long enough for the beginning. The work is new. It involves steps totally unlike any previously taken. It is full of pleasing surprises. Every nerve is on a tension. Such work exhausts, and the bright boy is more weary after forty-five minutes than at the end of two hours when he has become accustomed to the work. The exercise should end before weariness comes.

The laboratory has won its place in the school. Its introduction has proved successful. It is destined to revolutionize education. Pupils will go out from our laboratories able to see and to do. Manual training is one of its forms. It will enlarge its scope of usefulness until no pupil will leave the secondary school without some discipline in its methods. Then we may expect to rival every other race in ability to see, and leading jurists will be as willing to accept the observations of Americans, as complete, as they now are those of intelligent Irishmen.

LAROY F. GRIFFIN.

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HERBARTIAN LITERATURE IN ENGLISH.

In Two Parts.

PART I.

DE GARMO:

Translation of Lindner's Empirical Psychology.
Boston: D. C. Heath & Co. 1890.

The Herbartian System of Pedagogics.
Educational Review, Feb., March, April, 1891.

The Essentials of Method.
Boston: D. C. Heath & Co. 1892.

Ethical Training in the Public Schools.
A paper submitted to American Academy of Political and Social Science. Philadelphia, 1891.

FELKINS:

Science of Education (a translation of Herbart's Allgemeine Pädagogik).
Swan Sonnenschein & Co., London, 1892, and D. C. Heath & Co., Boston.

C. MCMURRY:

How to Conduct a Recitation.
Kellogg & Co. New York and Chicago, 1891.

REIN:

Pädagogik im Grundriss.
Göschenscher Verlag. Stuttgart, 1890.

LANGE:

Über Apperzeption.
Plauen. 1891.

The last two are in course of translation into English, and will be published, I understand, before Christmas.

Two events of special interest to students of pedagogic science have marked the present year,— the establishment in America of a Herbartian society, and the publication in England of a translation of the *Allgemeine Pädagogik*. Many teachers, unacquainted with the line of development which pedagogics is taking, may underrate its importance, but a closer inquiry will prove that anything relating to Herbart, especially anything which contributes to disseminate Herbartian ideas among an active community of teachers, cannot for long be ignored. Especially would we urge that teachers in *secondary* schools should seek to know Herbart. Unfortunately, in Germany, owing to the neglect of pedagogic study by most (Gymnasial) teachers, Herbart's doctrines have been accepted and developed rather in the interests of elementary than of secondary schools; but this accident should not blind us to the fact that, so far as the Herbartians allow their distinctions of grade to find a place, they

admit that Herbart's work, historically considered, finds its closest relation in the sphere of higher instruction, among children intended to reap the best fruits of the scholarship and culture of their time.

The pages of this present review are therefore as suitable as the present moment is opportune to effect an introduction between the great German teacher and the secondary teachers of America, to whom SCHOOL AND COLLEGE especially appeals. We can do so most appropriately by gathering together the few writings of the Herbartian school which have so far appeared in an English dress, and by indicating in the course of our criticism of these some of the principles of pedagogic science, which are to be traced to Herbart's teaching. Before proceeding to this criticism we must warn our readers against one error to which their study of Herbartian literature might betray them.

Teachers are great hero-worshippers, and they love to sit not only in the chair of authority but at the feet of authority. One is of Froebel, another is of Pestolozzi, and there are whispers on this side the Atlantic that some, in America, are of Col. Parker! In Germany, no less distinctively, many are pronounced Herbartians, or Herbart-Zillerians. We cannot be surprised at this devotion to a name and a system, for undoubtedly all of these names represent work of great and permanent value, and the teacher who has really learned to follow the footsteps of the hero will do useful work. But it is needless to dwell upon the harm that results from such a limited vision. It has this fatal consequence above all, that it hinders the devotee from worshipping at other shrines. The Froebelian finds all that is needful in the *Education of Man*, and desires to know nothing of the *Allgemeine Pädagogik:* the Herbartian is in danger of reversing the choice with equal exclusiveness of sympathy. We shall do better to take the wider view, and be willing to learn from all, while refusing to be the servant of any. The more we approach, in this truly reverent spirit, the works of our great masters, the more shall we appreciate not only the distinctive service and contribution of each one but the common attributes of all.

In such a spirit of criticism, but of very cautious criticism,

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should we commence to study the teaching of the great German philosopher, — the one great philosopher, who stooped down to study the child, who put his wisdom to the test of daily experience and intercourse with young boys. The books mentioned on our first page have all been written or translated * within the last three years, and we confidently regard them as the heralds of a new epoch in pedagogic instruction. We can scarcely be mistaken in assuming that German *Wissenschaft*, which has influenced so powerfully our theology, our classics, and our natural sciences, will affect in turn our pedagogics, as soon as the flood-gates are opened; and the founder of German pedagogics, of *Pädagogik als Wissenschaft* was Herbart.

We stand, then, at an interesting moment: we are watching the rise of a new stream at its source; what course will the rivulet take if it is to swell until it becomes a river? What are the conditions under which a set of new thoughts and principles can be safely, usefully transplanted to a foreign soil? Four considerations suggest themselves, which may assist us in our estimate of the publications before us, and may, perhaps, suggest to the little band of Herbartians some hints as to the future development of their task.

The first and most immediate duty is that of *introduction*, by translation or independent exposition. The few who can read German (happily in America "the few" are somewhat numerous!), and who have leisure to study the whole system in its original shape or to visit Germany for the purpose, do not need this assistance, but the mass of teachers must have an exposition of the new system produced in the literary form of their native country.

Secondly, the principles must be *applied*, and worked out in detail according to the special forms under which the art of education is conducted in America, and in England.

A third, and most difficult duty, is to *discriminate* and to *reconcile*: to discriminate what is special and temporary in the system, from what is of permanent and abiding worth; to rec-

* There may be other Herbartian literature in English, but I have not been able to hear of it.

oncile the aims and methods of the new system with those of other systems with which American teachers have been previously acquainted. There is much pedagogic thought and work already bearing good fruit among us; this is not to be wholly rejected in place of something new.

Finally, the most difficult task of all will be found in the need for *progress*, for revision, for development. The more thoroughly we are or become Herbartians the more earnestly shall we desire to reach out to something which is beyond Herbart.

The most distinguished Herbartians in Germany are aiming continually at a better exposition, at a fuller development of scientific pedagogics, reaping the fruits of the immense harvest of scientific discovery, which the last fifty years have borne us, — a harvest which is still being gathered in. The Herbartian who folds his hands, and who contents himself with a mechanical reiteration of the formulæ of his art, is the worst enemy of scientific pedagogics, especially in the new country, where Herbart and his school have yet to prove their value.

Following, then, these four data, we offer some brief comment upon the books which lie before us.

The amount of Herbartian literature in German is enormous; some of it, especially Herbart's own writings, is obscure and difficult even for Germans to understand with any thoroughness. Which of these works are to be translated? Are they capable of a literal translation at all? This consideration alone seems to me to condemn Felkin's *Science of Education*, which consists of a literal rendering of two of Herbart's advanced works, writings which, as Herbart himself acknowledged, cannot be understood without a previous acquaintance with his *Ethics* and *Psychology*. The result is a book which will be beyond the comprehension of the general reader, and which the present writer has been able to follow only by constantly referring to the original. The translator regards it almost as a merit, that he has retained all the difficulties of the German text and enhanced them by a verbal translation. This work of Herbart's is at least as difficult to an Englishman as a Greek or Latin

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author, and needs a commentary to explain it. With such a work, there are only two courses open: either to write in good English a summary of its contents, such as Mr. and Mrs. Felkin have attempted, with fair success, in this same volume, or to write a free literary paraphrase, breaking away entirely from the German construction, but giving the substance of each passage, adding with entire freedom an explanatory paragraph where necessary. But this latter is a task which could be attempted only by a literary man who, to his knowledge of English and German style was able to add a complete acquaintance with pedagogics. The simpler course is to leave such work alone; those teachers in England or America who find opportunity to sound the depths of Herbartian philosophy will prefer to read in the original; others will be content with translations of a less formidable character. We can certainly commend the industry of the translators, but we are forced to the opinion that they have done little service to Herbartian pedagogics.

The limits of this present paper will not permit a detailed criticism; we can only refer to one feature of the translation, on a point to which all translators of Herbartian's writings should give most careful attention. Every school of thought develops its own technical vocabulary,— the Herbartian pedagogics no less than others. Now if every translator, regardless of his fellow-workers, renders these technical terms as he pleases, there will be no end to the confusion. Large portions of Felkin's translation of the *Allgemeine Pädagogik* are made worthless to the English reader, by carelessness in this one matter. In our own pedagogic language things are already bad enough; we badly need a pedagogic dictionary to settle our terms; the Herbartians, if Mr. Felkin's example is followed, will lead us all to Babel! We read, for example, on page 227, the opening sentence of Chapter V., "From Discipline (*Zucht*), from drawing (*Ziehen*), the term education (*Erziehung*) is derived; the chief part thus of education in conformity with the name is usually assigned to that which I only now begin to take into consideration towards the end of my treatise."

(The reader familiar with German will be amused to notice how slavishly every item of the original form is reproduced in this, as in every page of the translation.)

Now by rendering *Zucht* by "discipline," the whole argument is confused; the ordinary Englishman understands by discipline exactly that kind of influence exerted over the child which Herbart does *not* imply by the word *Zucht*. There is no excuse for the mistake, for the translators show by their foot-notes that they had read President De Garmo's articles in the "Educational Review," in which these most important terms, *Regierung*, *Unterricht*, *Zucht*, are properly translated. One other example: President De Garmo renders that most difficult term *Vertrefung* by absorption; Mr. Felkin chooses concentration, a term which in itself might serve if it were not already appropriated to indicate another wholly different, and most important Herbartian idea, that of the concentration of the branches of the school time-table!

Again, what shall we do with the watchword of the Herbartian school, — *Erziehender Unterricht?* Mr. Felkin renders it "Education through instruction," which means nothing unless you know your Herbart beforehand. President De Garmo speaks of "Instruction that makes for character,"— a most happy phrase, which hits the nail on the head with a good English idiom, driving home to the most cursory reader the root idea of the Herbartian doctrine.

Let us hope that this grave error will not be repeated. Doubtless President De Garmo and his friends, in forming their society, have foreseen this danger, and hope to provide against it by mutual discussion and agreement. The work that President De Garmo has himself translated, Lindner's *Empirische Psychologie*, lends itself much better to the purpose, and will be appreciated by students of mental science as well as by teachers. The translation reminds us a little too often of the peculiarities of German construction, but, on the whole, it is written in clear and forcible style, and gives precisely what the teacher needs before he can appreciate Herbartian pedagogics, — a concise sketch of the psychological principles upon which Herbart developed his pedagogics.

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Rein's *Pädagogik im Grundriss* lends itself equally well to translation. Professor Rein is noted for the perspicuity of his style, both in speaking and in writing, and this little handbook contains a comprehensive account of the entire Herbartian system from A to Z.

The other books to which we refer are not translations, but they expound from a more independent standpoint the views of German writers of the Herbartian school. I hold that this kind of work is even more useful than translation, — works of pure science, of psychology or ethics, may be transplanted bodily from one language to another, but works that bear on the *practical art* of education do not so readily thrive in a new atmosphere, the society and type of civilization in the two countries is usually so different. Even in England, with no difference of speech to separate us, we find a difficulty in fully understanding books on pedagogic practice written in the States — how much greater is the difference between Germany, whose institutions resemble those of an army rather than of a free people, and America, the home of independence!

In *Ethical Training in the Public Schools*, President De Garmo has briefly sketched the famous five fundamental ideas which are a feature of Herbartian ethics, and has added thereto a sixth, apparently as a result of his own investigations.*

This idea, which he describes as "the doctrine of service," is suggestive of the new element in ethical thought and practice which is a feature of the present generation of the English race, but I question whether it can claim a separate chapter for itself; surely it should be included under the idea of *Wohlwollen*, — good-will or altruism.

This pamphlet is only a fragment, not written with the express object of expounding Herbartian ideas, but serving the better purpose of showing how these ideas will enable the teacher to fulfil his duty as a public servant, by discharging his

* We have not met with any other exposition of this "doctrine of service," and President De Garmo quotes no authority for this addition to the Herbartian scheme. The nature of his essay probably precluded references either to Herbartian or to other ethical writers of the school.

most important and most anxious duty, that of training the character without introducing sectarian instruction. In so doing President De Garmo is beginning to fulfil the third duty which I have ventured to impose upon the Herbartians, — that of adapting the principles of the school to the special conditions of American instruction. Lange's *Über Apperzeption*, which, we understand, is being translated this year by members of the recently established Herbart Club, is a monograph of recognized authority in Germany upon a point of peculiar difficulty in psychology, and one which is of vital importance to the teacher. It may therefore be regarded, in order of reading, as a sequel to Lindner's *Psychology*.

The other two books, De Garmo's "*Essentials of Method*" and McMurry's "*How to Conduct a Recitation*," deal with the same subject *Die Formale Stufen*, *i. e.*, the logical and scientific method of treating the material of instruction in a school class. The "Essentials of Method" expounds briefly, but fully, the steps of a Method-whole, according to the general Herbartian plan, without precisely following the system of either Rein, Ziller, or Dorpfeld, who have each of them worked out the general principles of method in a slightly varying form. There is a singular hiatus in the exposition, which other reviewers may have already pointed out. In the excellent illustrative lessons which are appended, the fourth step, called *Formulation*, is very properly introduced as an integral part of the scheme, but we can find no reference to this, or even mention of the term in the body of the work.

A further criticism will apply not especially to this book but to the whole scheme of method as inculcated from the Herbartian standpoint.

These *Formale Stufen*, these conventional stages of teaching, are applicable to instruction in branches of *study*, but not so readily to instruction in *the arts*. This indeed, is admitted by Wiget, one chief writer * on the subject, but Wiget scarcely appreciates the far-reaching consequences of his admission;

*Wiget: *Die Formale Stufen* (Chur. 1888).

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for it is scarcely too much to say that the course of development which education is now pursuing is to modify, if not to revolutionize, the work of the school, by subordinating thought to action, by employing art as the chief material of instruction, and science only as an aid thereunto. If this be so, then a scheme of method which is only adapted for study will not in the future be accepted as a method for the whole (shall we say for the most important part?) of the occupations conducted during the hours of school.

The little pamphlet by Dr. McMurry is of very modest pretensions, and should be useful, but we are bound to say that the translation of a few pages from Prof. Rein, with which it concludes, contains better value than the previous parts of the book. The author has attempted too much on a page. Some of the most important principles of Herbartian doctrine are polished off in a paragraph, giving the impression to the casual reader that these are merely adventitious adornments to the main theme, containing no great value in themselves. Apart from this the exposition of the five steps is clear enough, and the essay has only one serious fault, which, it would appear, is due to the title. Perhaps I am myself in error, as I am unfamiliar with the American use of the word "Recitation" (there are many forms of English spoken besides the dialect of our little British isles!). I gather that a recitation is a single lesson, contained within the compass of a single period, an hour or less.

Now if this is so, the introduction of the word into the title vitiates the whole book, for, as Dr. McMurry himself points out, the "Method-whole" cannot be restricted, as a rule, within an hour; it must be treated independently of the clock. The illustrative lessons are rendered almost worthless by the attempt to cut them down to the smallest limits. Thus the lesson on Nouns (page 21) is a very poor specimen of Herbartian teaching, and would be ruthlessly pulled to pieces in a pedagogic seminar.

J. J. Findlay.

University of Jena, August, 1892.

EDITORIAL.

HALF a century after his death Dr. Arnold, of Rugby, is to have a monument in Westminster Abbey. The site selected is an arch next to that in which is placed the bust of Keble, and not far from Wordsworth's seated statue. In his reply, granting permission to place the memorial in the Abbey, Dean Bradley indicates this space and concludes: "I need not dwell on the impressive fitness of such a spot, facing as it does the bust of his gifted son, for a memorial to Thomas Arnold." It is distinctly because of the influence which Dr. Arnold has exerted upon the great public schools of England, and so upon national life, that the British public feel moved to erect this memorial. Though a historian of no mean quality and a preacher of eminence, it is as a *teacher* that he is now gratefully remembered and honored. Moreover, the bounds of the British Empire have not confined his fame or his usefulness. In America scarcely less than in England his spirit and example have wrought their beneficent results upon school life. Would it not be a graceful acknowledgment of our appreciation of his distinguished service to the schools of the world for the teachers of America, combining their efforts, to tender a contribution to the fund for the erection of this monument? If the suggestion should meet with favor, the editor of SCHOOL AND COLLEGE will gladly undertake to receive, acknowledge, and forward all contributions that may be intrusted to him for this purpose.

THE announcement of the discontinuance of the *Academy*, calling attention to its brief but interesting career, forcibly reminds us of the recentness of the development of distinctly secondary literature in periodical form. At the time of the issue of that magazine, six and a half years ago, it was the pioneer in a new field. In America there was absolutely

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no publication doing the work the *Academy* proposed to do. In England there was the London *Journal of Education*, which gave secondary subjects much prominence but not exclusive attention. In France, the *Revue de l'Enseignement Secondaire* was nominally a journal of secondary education, but was far less practical and helpful than the *Academy* has been. To the editor and publisher, and to the Associated Academic Principals of the State of New York, under whose auspices it was begun and has been maintained, much credit is due for the quickening effect the magazine has had upon secondary teachers. It has attracted the men and women of the high schools and academies to the reading of articles on pedagogical subjects by providing articles worthy of their reading. It has done an even greater service by stimulating these teachers to pedagogical thinking, and to the presentation of their best thoughts upon the printed page. A pleasant feature of such service is that it does not end with the last number of such a magazine, but is, as Milton says of an author's spirit, "treasured up on purpose to a life beyond life."

THE desire for a readjustment of existing relations between the secondary and the higher institutions of learning is manifesting itself across the border in the Province of Ontario. From a paper, by Inspector John Seath, read before the University Mathematical, Modern Languages, and Science Association at Toronto recently, it would appear that both the universities and the high schools are suffering from the low standards of admission allowed, and from a lack of connection between the lower and higher portions of the educational system. The scheme of examinations proposed by Mr. Seath cannot be fully understood without a more intimate acquaintance with the terms and customs in vogue in Ontario schools, but the suggestions favoring sight examinations in the ancient and modern languages, a larger amount of English literature and of science, and a generous provision of options throughout, are all in accord with the trend of opinion in the United States.

Incidentally to his argument for a change in present condi-

tions, Mr. Seath makes a statement of his own opinion of educational values, which is noteworthy as the fruit of the experience of a skilled inspector of high schools. It is this : —

"It is, I believe, far more difficult to reach in Latin or Greek, and especially in Greek, that state of proficiency in which the literary value of the language is fairly available than it is to reach the same state in either French or German. The educational, not to speak of the literary value of Latin and Greek, when properly taught and given the necessary time, is greater than that of French and German ; and assuming the requisite mental maturity, it is easier to become fairly versed in a science than a language, either ancient or modern. But for the ordinary high-school entrants the science option, which attaches less importance to mere memorization and more to correct observation and induction, is more difficult than a language one. The practical value, however, of French or German is greater than that of either Latin or Greek. So too, in the case of a science, the educational value of which, besides, is at least as great for the ordinary purposes of life as that of a language ; having due regard of course to the fact that, assuming proper receptivity, the science is more readily acquired. . . . The determination of the relative values of classics, moderns, and science with fractional accuracy — for nothing else will satisfy the partisan — is a problem incapable, I believe, of definite solution. . . . But the relative value of the departments is not, I hold, a matter of prime importance, so far at least as our high schools are concerned. What one department lacks in purely pedagogical value it makes up in greater and more available practical usefulness ; and so far as the languages are concerned, the real differentiation is more marked in the later than in the earlier stages of their acquisition. Most modern and progressive universities also, as, for instance, London and Harvard, equate Greek, French, German, and some science, and even so difficult a language as Arabic or Sanscrit. This course, we have reason to believe, has proved advantageous to the universities, and to the general public." *

* *The Educational Journal*, Toronto, May 1.

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NEWS FROM ABROAD.

ENGLAND.

SERVING TWO MASTERS.

At a time of political excitement and suspense, it was not to be expected that much space or discussion should be allotted to educational subjects; and, as if aware of this circumstance, the speakers upon prize-day platforms confined themselves, in many cases, to their own affairs and made no attempt to influence public opinion. Thus Marlborough contemplated its jubilee which comes next year, and the need of accommodation for its musicians; St. Paul's spoke of scholarships; Felsted of increased numbers and prosperity. At Eastbourne, however, the Duke of Devonshire, excluded from the parliamentary contest by his succession to the Peerage, remembered that besides being the patron of the college he was President of the National Association for the promotion of Technical and Secondary Education. His Grace remarked that technical education might fairly and accurately, though not exhaustively, be defined as a movement the object of which was to adapt education more closely to the life and needs and business of the country. Of late years, he said, the necessity had been recognized of educating the younger generation in subjects which more closely affected the occupations and industries in which they would in mature life be engaged. This statement may mean much or little: with a moderate interpretation everyone will agree; but it has been asserted in an evening newspaper that in at least one American school the pupil can be instructed in the actual details of banking, stock-broking, dealing in dry goods or what not, just as if it were not a school, but a merchant's office. For this development we are still unprepared, although the best head masters see that if boys cannot get the necessary instruction in schools, they will leave them at fifteen or earlier and get it outside amid influences which cannot be described as educational, very often to the ruin of their lives and the great disgrace of the system that leads thereto. It is the same with the professions as with business. "One of the great disadvantages of the present system," according to the Head Master of Epsom College, "is that those boys who most require the discipline and teaching of school are very often sent up to the hospitals of London before they are really fit to go to them." Mr. Hart

Smith would like to see some means adopted of keeping those boys and training them to pass their first London examination before they leave school. The same Head Master went on to say that he would be very sorry if the application, that Epsom College should be registered as a school of science, should lead any one to suppose that they wished to make any difference as to classical teaching; the teaching of the school must always be conducted on a classical basis. This also was wisely said. Apart from any intrinsic value that the classics may be thought to possess, it is simply necessary to the existence of any First Grade Head Master who has no pre-eminent social or athletic standing to rely upon that he should give classics the first place. Latin and Greek are still prescribed by the colleges and universities that wield the greatest pecuniary power by reason of their endowments, and whose scholarships are the first rungs of what is still the tallest and safest ladder for young ambition and ability. A school is judged by the number of Oxford and Cambridge scholarships which it obtains; and no boy of much promise will be allowed, if his father knows what he is about, to remain at a school where the classics are neglected. Here we have two conflicting interests, the one that of Oxford and Cambridge, which ought to be purely educational; the other, that of the various professions, which ask for special and technical instruction. The lives of head masters are shortened or embittered because they are dragged now in one direction and now in the opposite. They are racked by the divergent forces until they cry out to the universities to give credit for something besides the dead languages, and to the professions and commerce to recognize the value for active life of some kind of training in language, literature, and history. Very comforting was the utterance of Sir Joseph Fayrer, at Epsom, who maintained the importance of the Greek and Latin classics in schools in which boys were being trained for scientific pursuits, "as nothing could train the mind more effectually to deal with the problems of physical science, when it was subsequently confronted with them." There can be no end to this torment until some compromise is definitely and generally agreed upon. Bi-furcation and tri-furcation, with modern sides and science sides, army classes and matriculation classes, are excellent expedients; but the overwhelming temptation is to divide and specialize too early, long before a boy gives any but the dimmest signs of special ability, and also long before he has an adequate knowledge of the subjects he discontinues. Without great vigilance the result is simply that one of the two interests is served and the other hoodwinked. There is a rush of boys to one side, often for very insufficient reasons, and the other side stagnates. In any case a school is divided, if not against itself, yet with a considerable loss of

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unity and sympathy. At present the sufficient defence of the plan is that it is better to have two sides in one good school than to have two inferior schools, or, worse still, to have one inferior school and boys who should be at school scattered here and there in lodgings in London or Lancashire.

T. W. Haddon.

City of London School, 22d August, 1892.

FRANCE.

FRENCH ORAL EXAMINATIONS — PEDAGOGY.

The months of July and August, almost universally the vacation time of American schools, the French consecrate to examinations. With us Americans, sworn adherents, if not bond slaves, to the sacred custom of written examinations, a few days suffice for the supposed test of the pupil's knowledge, — or memory perhaps we should better say. But in Paris, with thousands of pupils to be examined, and with that examination oral at least in some degree, two months hardly suffice for the task. These inquisitions, at which one student at a time is martyred, are public, and to the curious observer one of the most interesting ways of spending a few days in the most interesting part of the most interesting of cities, the Latin Quarter of Paris. Enter the old Sorbonne at almost any hour and you will see a row of grave judges, professors, and superintendents, and before them a boy who may have the serene face of a Saint Peter, the frightened, stony stare of a flayed Marsyas, the smirking, insinuating, ingratiating air of a Saint Sebastian, or an expression to do credit to the sensations and sentiments of any other hero of profane or Christian martyrology. To the boy much depends upon the result of this day, his bachelor's degree; to the young man two years later, his license; and later still, the agregation, a sort of degree for post-graduate work, worth about midway between our A. M. and Ph. D.

Now, instructive as is the first of these examinations to the teacher who is himself preparing students for a similar degree at home, we notice that most visiting teachers prefer to witness the last-mentioned examination, that of young men who have been preparing themselves for teaching as a profession, an examination upon some specialty which, as professors, they will be supposed to know pretty thoroughly. Unlike the examinations for higher degrees in most of our American universities, the object in view is two-fold, not merely to test the candidate's scholarship, knowledge and ability in original investiga-

tion, but as well to examine him in the principles of pedagogy and in its practice, — really to test his aptitude for actual service as a teacher. The French have happily left behind them the German idea, too prevalent, I fear, amongst us, that the teacher is merely a merchant of science, that the best scholar is necessarily the best instructor. But, granted that it would be advantageous to know something of the candidate's ability as a teacher, how are we going to test it? The French method as actually practised is almost worthless; the state of mind of the candidates and their method of preparation are both far from what they should be.

The aggregation of history, for example, in which I was interested perhaps more than in any other, is an examination that seems not sufficiently scientific, giving rather the illusion of the science than the science itself. The oral thesis, chosen from a list of subjects imposed by the jury, would be happily replaced by a manuscript thesis, freely chosen, as practised in Germany and in America. Then the oral examination is of such a kind as was given twenty years ago; knowledge and method count for nothing. Too great a place is left to chance, to superficial preparation; it remains a test at second hand, and we can no longer understand the precautions taken to limit the use of the documents in the archives, and to interdict all truly original work. Then, too, this examination in history is not merely a scientific examination; it is, or rather it pretends to be, a pedagogic examination. However, we would better not examine too deeply into the question whether the candidate really knows history, or whether he is prepared to teach a class, or we shall find some very fragile things which will stand only on the condition of not being touched. All that can cover the pedagogic point is the model lesson that the candidate, after twenty-four hours' preparation, must deal out, as when he has become a teacher, he would wish to do before his pupils. But he must have a strong imagination to see in the members of the jury — inspector-generals, rectors, and college professors — now a class of freshmen and now a class of seniors. The fiction is a little strong and the reality feels it. In fact, this model lesson has nothing in common with the lessons that are given in the schools. It is often too long, and it is very rarely to the point. It is impossible for a candidate who has never taught to divine what a class is; and it is still more impossible to make a real recitation except with real pupils. Then, too, the class which is addressed at the examination is too respectable. It has too much power over the future of the candidate for him not to recognize the fact. He speaks to the jury, not to pupils, and this adaptation is the only point on which the examination touches pedagogy. We may conclude with M. Levisse that the ex-

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amination in history "contains not a single proof of the candidate's aptitude to teach."

The French universities, and especially the faculty of letters of Paris, have tried to create an interest in pedagogy. In spite of smiles, they are doing it well. The courses of pedagogics do not pretend to put into formulæ the art of instruction, nor to make a code for the perfect teacher. Their aim is simply to cause reflection, to awaken sentiments, the germ of which exists, but which, like plants incapable of development unless they are sustained and nourished by others, would ever remain dormant if they were not given the occasion to grow. They call attention to the difficulties, insignificant in appearance, which often become the rock on which we split; they habituate speaking of the profession, dreaming of the future of the profession; they put us on our guard against the slow invasion of routine. Mock at it who will, the task is easier to-day than it was formerly. It was once every young teacher's hope to get a school where the pay was large and the pupils few; for there was not only history to be taught, but a good deal of it first to be learned. These teachers went at their task with courage; the more confident, those who loved youth, for whom teaching was a pleasure, quickly gained their audience by their wisdom, their firm good humor, their discipline. Others, more timid or more clearly seeing the danger, never sat very solidly in their chairs. Their knowledge and their work were constantly thrown against a deadness that they could never awaken or a malevolence that they could never understand. What the courses in pedagogics look forward to is to put to their greatest use the natural aptitudes of the one and to teach the other that he must gain the mind throngh the heart.

What ought this examiniation to be? Will the professor be a better teacher because he has written a dissertation upon such a theory of Rousseau, of Froebel, or of Bain? A teacher is made only by practice. There is something in pedagogy, as in every science; it is more than an invention. Those who study it by themselves are exceptions, that is, unless we count among them all those who, having traced a certain line of conduct and of study which they impose upon their pupils by the force of habit, or by the weight of their authority, imagine that they have attained perfection, and that they have nothing to learn from others about what they have created for themselves. This illusion is dangerous, and every day augments the difficulties. The teacher must give something of himself, must give his whole self to his task. Should he be put to such responsibilities without being prepared for them?

Fred Parker Emery.

Saint Helier's, Jersey, August, 1892.

GERMANY.

SCHOOL DISCIPLINE.

In my last letter I showed that the leading principle in our education is the bringing up of youth to the feeling of duty. In this feeling they have in later years a stimulus that helps them over many difficulties and obstacles, especially when they become public officials. By the aid of this feeling alone, however, we should not, at least not with average children, get the results in learning which the boys need, and so other stimuli are required to bring them forward in knowledge.

The first thing to be done in order to attain this end, the first rule of teaching in general, is to win the hearts of your pupils. By love and kindness you will attain infinitely more than by severity and roughness. Therefore all flogging is forbidden in our schools, except when a shameful deed is done by a pupil. In this case he may still be whipped, but this sort of punishment is to be inflicted only in the presence of the head master and by his particular order on boys of the lower classes; seniors are sent away from school if they commit an offence for which juniors are flogged. In case a teacher beats a boy, if he only gives him a box on the ear, the parents may demand his removal, or at least a punishment by law. Still there are a great many teachers who, in case of impudence on the part of a boy, will instantly punish him by a hearty box on the ear and abide the consequences. In such cases, they say, instantaneous punishment must be inflicted, the indignation of the teacher must be made known by his bursting the restraint that is laid upon him as to the means of punishment. The effect of punishment is much enfeebled by a long delay, and the authority of the teacher will certainly not increase, if he acts only as an accuser. But, indeed, we hardly need to practise flogging, there are so many means of punishment besides. The hardest is imprisonment in the school-prison in case of bad behavior at school or out of school. If it shall last more than two hours, it may be inflicted only by the head master. For laziness the boys are kept at school during the leisure hours, or are not allowed to advance into the higher class at the end of the term.

One of the most effective means of working upon the boys is ambition. The boys are seated in the class according to their knowledge. To be the first of the class is a great honor and distinction, to be the last is the contrary, especially if a boy has got this place because of laziness and not for want of talents. Does he lose his place at the end of the term, is he degraded only by one or two seats, he generally feels most unhappy. On the contrary, pride and joy fill his heart if

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he has gained a few seats. The mark which he brings home twice a year, and which shows the parents what progress their son has made, is also much respected; and the moment is much dreaded when the teacher distributes the certificates, for then he characterizes each pupil by a few words relating to his conduct or diligence.

The greatest influence is, in my opinion, exerted by the teacher himself. It is generally to be observed that in the course of a year the class becomes the very likeness of the *ordinarius*. If he always does his duty, the pupils will soon come to follow his example; if he is constantly attentive during the lessons, they will eagerly listen to his words and never try to play or think of other things. On the other hand, the boys very sharply and quickly observe if a teacher is lazy or inaccurate in the correction of their compositions, if he is often absent in mind during the lessons, if he is careless in his writing; and they will become so too, or be inclined to make fun.

Above all, the teacher must be just. As soon as the boys discover that he makes no distinction between the son of a state-secretary and the son of a cobbler, they are ready to trust and respect him; and if to justice he joins a little love and an interest in their childish affairs, he is not only respected but loved and adored. A sharp or a kind word from him will accomplish more than the severest punishment, or the highest praise from others. And this love and respect, I know from experience, do not cease with the school-days, but last during life. They constitute the best reward of the teacher for his heavy work and often small wages.

The attention and care with which the results at school are watched at home are also of great import. Those parents who scarcely listen to their boys when they bring home a dictation or composition with a good mark, who never cast a look upon their boys' writing-books, and do not read what notes to the parents the teacher has set at the end of the compositions, cannot be astonished if their children soon regard science and letters with the same indifference as the parents do, and if they make no progress in their studies. School and home must work hand-in-hand, and praise or blame given to the pupil at school must also resound in the paternal dwelling, must be heard and felt by the parents. Then success is secured, and the anxiety about their children's fate which often troubles parents at the end of a term will certainly disappear, being replaced by a confidence that is not to be shaken, because it is founded on the conviction that both parents and children have done their duty.

OSCAR THIERGEN.
Professor at the Royal Corps of Cadets.

DRESDEN.

HOME NEWS.

RECENT COLLEGE REPORTS.

I. ADELBERT COLLEGE.

The recent report of the president of Adelbert College of the Western Reserve University has special reference to the last ten years, within which period the college has been located at Cleveland, Ohio. These have not been years of large increase in numbers, but it is believed that the decades to follow will receive great advantage from the thorough work done in this period. The number of courses has increased from forty-four to ninety-three, and all departments have felt the improvement. The group system of electives introduced quite recently, which begins with the second term of the Sophomore year, is working satisfactorily. The fees for tuition are less than one tenth of expense of the college. Gifts to the amount of over $700,000 have been received within the ten years. A new building to include laboratories for the departments of chemistry, biology, and physics, a building for a place of assemblage, and a library fund of at least $50,000 are the especial needs of the present. An increase of $3,000 in annual income is required in order to meet expenses. Graduate courses, forty-four in number (of which thirty-three are also open to undergraduates), are offered for the next year by the faculties of Adelbert College and of the College for Women.

II. BUCHTEL COLLEGE.

Subjoined to the report of the president of Buchtel College, Akron, Ohio, is an interesting special report of the Elective System in use at that institution from 1883, made by Profs. Shipman and Knight. The course of study is elective after the first term of the Sophomore year. Each student is expected to choose for himself four subjects, sixteen recitations per week; and to choose, as far as may be practicable, consecutive lines of work. He must satisfy the faculty that he is qualified to pursue the subjects chosen, and must so elect that he will be able to obtain the requisite number of subjects each session throughout the course. There are offered a maximum of eleven and a minimum of six, or an average of more than eight, subjects per term. The system operates well. The professors are enabled to extend each department of work considerably beyond the limitations of the ordi-

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nary college curriculum and the students are enabled to follow out those lines of advanced study which are most congenial to them. The individual student is interested, stimulated, and encouraged; his work is more spontaneous, healthy, and successful. The classes work together more zealously, and are less hindered by uninterested drags. The teacher is impelled to do more outside work and becomes more truly a leader. Students do not choose easy subjects, for those who would be inclined to do so drop out lower down. Moreover, each department is expected to call for its fair share of work. The principal difficulty is in deciding what not to take. Some students would like to take more than the regular course. An incentive is thus offered for the student to return for post-graduate work. Two elements of the Elective System at Buchtel are given especial emphasis. First, the perfect simplicity and fairness of the arrangement, fair to the student, and just to each department; and, secondly, the fact that the students choose their work without advice from the faculty. The report concludes with a statement that their Elective System has proved to be very satisfactory and successful.

WOMAN'S EDUCATION AT BROWN UNIVERSITY.

The past scholastic year has greatly changed the attitude of Brown University towards the higher education of women. Sept. 2, 1891, the corporation opened all its examinations to women. June 21, 1892, it opens all its degrees to women. Two days later, on June 23, to women already holding Bachelor's degrees, and to other women of liberal education who may secure special permission, it opened, on the same terms as to men, all those of its courses of instruction which are intended for graduate students. This range of instruction is now very broad. Thus, so far as its graduate department is concerned, Brown University now places women on exactly the same footing as men. In respect to instruction, examinations, and degrees, the two sexes are treated precisely alike. In the undergraduate department, the University offers to examine all women candidates, and to bestow any of its degrees upon every woman candidate who passes all the examinations required for the degree sought. Furthermore, while not yet formally offering to women undergraduate class-room instruction, it has secured an elegant building near the University grounds, in which women's classes in college studies will be conducted with instruction precisely the same as that given in college, and with members of the Faculty as instructors. Last year thirteen women availed themselves of a similar arrangement.

This provision for woman's education is avowedly only temporary.

The University desires to establish a Woman's College which shall be a part and parcel of the University, giving woman students the full University status, and at the same time so furnished, endowed, and equipped as to offer them every facility for education, physical and social as well as intellectual, now within the reach of male students. For this purpose half a million of dollars is asked for.

THE HERBART CLUB.

One interesting feature of the recent meeting at Saratoga was the formation of a "Herbart Club," and an agreement to bring out by collaboration early in the fall Lange's *Über Apperzeption.* President Charles De Garmo, of Swarthmore, Pa., will edit the volume. The work of translation has been divided up among the following: President De Garmo; Levi L. Seeley, Lake Forest University; Elmer E. Brown, University of California; Thomas B. Noss, of one of the Pennsylvania Normal Schools; Mrs. Eudora Hailmann, La Porte, Ind.; Herman T. Lukens, Chicago; Charles P. McMurry, Normal, Ills.; Frank McMurry, Normal, Ills.; Margaret K. Smith, Oswego, N. Y.; Ossian H. Lang, Buffalo, N. Y.; and Henry M. Leipziger, New York.

NORMAL INSTRUCTION IN SECONDARY SCHOOLS.

PRINCIPALS of such secondary schools as furnish normal instruction of any kind to their students are invited to aid a member of the Harvard department of the History and Art of Teaching in his investigations by sending to H. Gordon Johnson, 48 Concord Avenue, Cambridge, Mass., answers to the following queries: —

1. Name, class, size, and location of school?
2. What amount of normal instruction, in time and ground covered, is offered?
3. How many receive such instruction?
4. How many of those in the class do *not* intend to make teaching a profession?
5. Is there any attempt to persuade scholars to take such instruction as a preparation for the future duties of parenthood?

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LETTERS TO THE EDITOR.

COMMENTS ON A RECENT REVIEW.

To the Editor of School and College:

I send you by to-day's mail a printed paper read by me June 20, 1892, before the Missouri Teachers' Academy in session at Pertle Springs, Warrensburg, Mo.

On reaching home after the adjournment of the Academy I found your June issue of School and College. I immediately turned to the review of Lobatschewsky's Theory of Parallels. Mr. Conant says, "For two thousand years Euclid was looked upon as impregnable against all assaults, and, in a certain sense, he is still and must always continue to be so looked upon." In what "sense," pray? In a Pickwickian sense? In the sense of "the brilliant Russian scholar" who, "without denying Euclid's postulate," "presented an alternative postulate which asserts that the sum of the angles of a triangle is always less than two right angles"?

How can Lobatschewsky assert that the sum of the angles of a triangle is always less than two right angles without denying the Euclidean affirmation that the sum of the angles of a triangle is equal to two right angles?

I am surprised that Mr. Conant should repeat the untrue statement of the metageometers, that Lobatschewsky built up a "perfectly consistent system of geometry." I have pointed out a number of inconsistencies in Lobatschewsky's geometry in the brief paper that I have sent you.

On page 375 of your June issue your reviewer says, "Legendre endeavored to establish the equality of the angles of a triangle to two right angles without recourse to parallels. Having assumed the infinity of space, he actually did prove that the sum could not exceed two right angles; but he failed to prove that the sum could not be less than two right angles." Now my study of this subject convinces me that it is just as easy to prove that the sum of the angles of a triangle can not be less as to prove that it can not be greater than two right angles. My demonstration is given on pages 15 and 16 of the paper I have sent you. It is respectfully submitted for your inspection and criticism.

Mr. Conant's assertion that "the question of the truth or falsity of a system of geometry is of absolutely no moment to us" is calculated to startle a land-surveyor or bridge-builder.

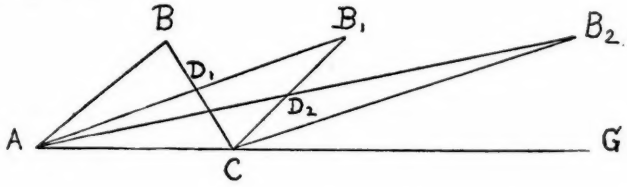
Yours, J. N. LYLE.

FULTON, MO.

Professor Lyle's demonstration, as given in the pamphlet, *Euclid and the Anti-Euclidians*, is this: —

PROPOSITION II.

The sum of the three angles of a rectilineal triangle cannot be less than two right angles.



Let A B C be any plane rectilineal triangle; then the sum of the three angles A, B, and C cannot equal two right angles —a.

For if A+B+C=2 right angles —a, another triangle A B_1 C may be constructed, as in the preceding proposition, the sum of whose angles is equal to A+B+C, and hence to two right angles — a. (The construction alluded to is as follows: The line A D_1 B_1 is drawn through the middle point D_1 of the line B C, and extended, making D_1 B_1=A D_1; then the points B_1 and C are connected by the line B_1 C.) It is evident that the angle A C B_1 is larger than A C B.

By halving the side B_1 C and proceeding as before, we may construct a triangle A B_2 C, the sum of whose angles is equal to that of the angles of the triangle A B_1 C, and hence to A+B+C. Furthermore, the angle A C B_2 is greater than A C B_1.

By halving the side B_2 C and continuing the process of constructing successive triangles, we may reach the triangle A B_n C, in which the sum of the three angles = A+B+C = 2 right angles — a, but in which, at the same time, the angle A C B_n may be as nearly equal to two right angles as we please, and hence be greater than two right angles — a.

That is, one angle of the triangle A C B_n may be greater than the sum of its three angles, which is absurd.

Hence A+B+C cannot equal two right angles — a, *quod erat demonstrandum*.

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METHODS IN ELEMENTARY GREEK.

TO THE EDITOR OF SCHOOL AND COLLEGE:

Dear Sir,— I have been much interested in Prof. Seymour's paper upon the teaching of Greek. If it could be arranged, I should be very glad to hear from him again upon a few points not noticed by him at that time. Perhaps I can best express my meaning in the form of questions:—

1. What are the main objects to be obtained in the study of Greek?
2. Are those objects considered to be the same that they were under the old methods?
3. How do the new methods better secure those objects than the old methods did?

Some of us are working in the dark; we are teachable, but somewhat befogged.

If "SCHOOL AND COLLEGE" maintains the high standard that it has attained in the last three numbers it will do a work for the high schools that has never been done before. Very respectfully,

W. R. HEMMENWAY,

APRIL 23, 1892. LA CROSSE, WIS., HIGH SCHOOL.

THE EXACT MEANING OF THE TERM THESIS.

TO THE EDITOR OF SCHOOL AND COLLEGE:

Within the last ten years the term thesis has come into frequent usage in the college world. I think I am correct in saying that the department of philosophy, if not originating the college use of the term, formerly employed it far more than other departments. At present, however, its use extends to any department of instruction where written work is required of the student.

In the latest issues of programmes of courses in Harvard University, the word thesis is applied to papers in Philosophy, Literature (both English and German), History, and Geology. It is also applied to papers in many different courses at Wellesley.

Now, when we inquire at the college doors, as to the chief characteristic of the thesis as a form of composition, we get little information of a definite kind. As the use of the term is usually limited to advanced courses, it is taken in a general way as meaning a thoughtful, mature, elaborate, though not necessarily a long, paper, as distinguished from the more modest efforts of lower grade students which are called essays or themes.

It is by exception, rather than according to an established rule of

colleges, that at Wellesley the department of English includes the thesis among the forms of composition studied in systematic course. Here the requirement is based upon the definition of thesis in Webster's Unabridged, the definition substantially adopted by the Century Dictionary. As thesis means, in its first intension, "a proposition which one advances and offers to maintain by argument," the thesis, as a piece of writing, is a dissertation advancing the arguments in support of a stated proposition.

It is a pity that a historical sketch, the record of a scientific experiment, or a descriptive essay, should be called a thesis, unless it is clear that in the facts presented, the writer is developing an argument to support a definite position or theory, *which he should explicitly state.* I believe it to be a matter of importance towards establishing accurate use of language, that college instructors should reserve this term for the argumentative discourse.

It seemed to me a somewhat interesting coincidence that last June, when, during the Commencement season, the talk was so often of theses, the term occurred with unusual frequency in the current magazines. I quote some of these references.

In the June *Harper*, Mr. Charles Dudley Warner, reviewing *Tess of the d' Urbervilles* in the Editor's Study, writes: —

"Mr. Hardy's *thesis* is that we must be judged by the will, not by the deed."

In the English edition of the June *Review of Reviews*, Mr. W. T. Stead writes concerning an article by Cyril Waters in the *Westminster Review*: —

"His view is that, in our own interests as nations and individuals, we must consent to overlook, in return for great public services, sins, weaknesses, and criminal follies; and in *support of this thesis*, Mr. Waters runs through several notable characters who have played improtant parts in history."

In the American edition of the same magazine, a review of an article in the May *Blackwood's Magazine* reads thus: —

"We come to the main *thesis* of the writer, which is that the civilization of the United States is not civilization proper, but rather, what is conducive to the welfare of materialists."

In these three quotations on totally different subjects, it is evident that the writers mean by thesis a proposition to be proved. If this is to be the established usage of the term, its use, as applied to a form of composition, must be consistent with this meaning. Such consistency is to be found only in limiting the term to an argumentative dissertation supporting a proposition. ESTELLE M. HURLL.

NEW BEDFORD, MASS., Sept. 8, 1892.

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REVIEWS.

A HOMERIC DICTIONARY. For Schools and Colleges. Based upon the German of Dr. Georg Autenrieth. Translated by Robert P. Keep. Revised by Isaac Flagg. New York, Harper and Brothers, 1891. — 7½×5 in., pp. xvi, 302.

When, in 1873, Autenrieth's "Homeric Dictionary" was first issued in Germany, it was received with great favor. It was unique among school books in several respects: its terse articles giving in compact form, so far as might be useful for the German student, the main facts of Homeric usage, in the light not only of recent text criticism, but also of the results of comparative philology, and its numerous cuts illustrating many features of Homeric life, commended it as at once timely and helpful. Since the appearance of the first edition, a large number of works explanatory or illustrative of Homeric language, poetry, and times, have been published — above all Ebeling's great lexicon and Helbig's *Das Homerische Epos aus den Denkmälern erläutert*, not to mention annotated editions, monographs, and other treatises. In the light of these new works, and especially by reason of the contributions of a host of foreign scholars, the German dictionary has undergone revision in successive issues, wherein the substance has been in part recast, the form modified, the illustrative material augmented and rearranged. The popularity of the work is attested by the call for repeated editions, and by the fact that the book has been translated into English, Dutch, French, and Italian.

This book was made available for American and English students in 1876 in Dr. Keep's translation. In this edition many errors were corrected, a few additions made, as of English etymologies, but in the main the translation was a faithful English version of the German original. Within the fifteen years that have elapsed since 1876, the little book has gone through many editions, and over fifteen thousand copies have been sold; each new issue has incorporated minor changes or additions furnished in large part by American teachers. The continued demand for the book, as well as the fact that in some respects it was not as well adapted for school use as it might be, led the publishers to provide for a new revision. It seemed desirable to distinguish more sharply between the known and the uncertain, and

to secure greater conciseness, simplicity, and system in many of the articles, especially those on particles, prepositions, and conjunctions. The task of revision was committed to the hands of Professor Isaac Flagg, of the University of California, and has been discharged with the learning, sobriety, and literary tact that characterize all Professor Flagg's work. In many particulars the revision is a new book, which, though better for the student than the old, by no means wholly replaces it; indeed, for the teacher at least, the earlier editions should still hold an honorable place upon the library shelves.

Among the excellent features of the revision are the discrimination made between the original and the implied meanings of words and the indication of the same by happy typographical devices (for the former, italics; for the latter, inverted single commas). A consistent Latinized spelling has been adopted for proper names; most of the English etymologies and Latin definitions which formed an interesting feature of the old book have been rejected; important articles have been greatly condensed, and space has been also gained by the omission of not a few cuts; most of the articles, at least of the longer ones, have been made briefer by a more pointed form of statement and by the omission of many of the references; some have been expanded, and always with admirable judgment; errors have been silently corrected; all doubtful quantities have been marked in Greek words (*a*, *ι*, *υ*,) and in the English-Latin forms of proper names. Instead of a book of three hundred and sixty-five pages, we now have one of three hundred and eighteen. Every page shows improvement, and in every particular the book is sure to prove itself much better adapted to the needs of the average student.

Tastes differ, and one should not quarrel too sharply with an editor for sins of addition, subtraction, or omission, especially when limits have been set to his activity by his publishers. But I cannot forbear expressing my regret that in the matter of cuts and explanatory articles the revision was not made more thorough, and that Autenrieth's example was not followed, not only in rejecting many of the less pleasing or less appropriate cuts and in substituting better ones, but also in relegating the illustrations of similar objects to a classified appendix. The illustrative material for Homer has so vastly increased of late,* and the processes of reproduction have become so cheapened, that a book of the currency and popularity of the Dic-

* See Anderson-Engelmann, *Pictorial Atlas to Homer* (New York: Westermann); Baumeister, *Bilderhefte, etc.* Heft III., *Sagenkreis der Trojanischen Kriegs* (Munich: Oldenbourg); Schreiber and Seemann, Kulturhistorischer Bilderatlas, Part I., Altertum (Leipzig: Seemann).

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tionary ought not to be allowed to fall sadly behind the times. I regret also that Professor Flagg has seen fit to drop so often the dagger (ἅπαξ εἰρημένα) and other indications as to the limitations in the use of words.

This is not the place for a detailed criticism, but the following notes and corrections, suggested in part by Autenrieth's sixth edition (German), may not come amiss to future users of the book. Page v, lines 25, 26, erase from "or, if," to "Homeric form." — *S.* ἄγονος, read *without children;* ἄγονος καὶ ἄγαμος was proverbial. — *S.* αἴθοψ, read αἰθοψ. — *S.* αἰθρηγενέτης. This word as epithet of Boreas was perhaps felt as coming, not from αἰθήρ, but from αἶθρος *cold*, and might be rendered *born of the cold.* — *S.* ἄϊμων, read Ε 49 †. — *S.* αἰσυμνητήρ and αἰσυμνήτης. These words are confounded with each other by two misprints. — *S.* ἀκμηνός, read ψ 191†. — *S.* ἄμπυξ, read *head-band* (metallic) . . . Χ 469. — *S.* ἀμφίβροτος. The cut (No. 3) is unfortunate in this place: it represents, not the ἀμφίβροτος ἀσπίς, but the smaller circular shield (cf. cuts 12, 17). — *S.* ἀμφικύπελλον. The explanation cited from Aristotle is interesting, but alike etymology, the monuments and Aristarchus suggest a different one. As ἀμφιφορεύς means "(a jar) having carriers — handles on both sides," — so ἀμφικύπελλον, originally an adjective in agreement with δέπας, means "doubled-handled" (cf. capulus, κώπη, and see cut 28). — Insert ἀμώμητος, *faultless* (see ἀμώμων) Μ 109 †. — *S.* ἄν. The uses of ἄν w. opt. in conditions contrary to fact should have been noted and illustrated. — *S.* ἀνθεμόεις, read cut 91. — *S.* Ἀργεϊφόντης. The question is not as to whether *bright shining* or *Argos-slayer* is the more poetical expression, but as to what the Homeric poet meant by the word. — *S.* Ασιος, read Hyrtacus. — *S.* ἀωτέω, read Κ 159. Probably this word means to *breathe hard — snore?* (ἀυτμή). — *S.* ΔΑ, read (διδαχ-σκω). — *S.* ἕδρη, read cut 73. — *S.* ἕλιξ. γναμπταί ἕλικες seems to mean *spiral pins* (not armlets), of which Helbig gives good cuts. — *S.* ζῶμα. Is ξ 482 provided for? — *S.* ἤ. Insert the definition *to be sure:* the word has this adversative force in Β 291 (*immo vero*). — *S.* ἤνοψ, read "always of χαλκός." — *S.* κινυρός, *whimpering, wailing* (Ρ 5†) can hardly be said of a cow! — *S.* κλέος, the parenthesis is superfluous. — S. λέβης. Cut 76 illustrates nothing here. — S. μέροπες. It is perhaps impossible to expect assent for any explanation of this much discussed word. But something may be said for "open-eyed," "living" (cf. Hesych. μέρα, βμματα). — *S.* Ὀδυσσεύς, for Ctimene read Anticlea. — *S.* Οἰκλείης, read Ὀικλείης. — *S.* ὀκτάκνημος, read κνήμη. — *S.* Παρνησός. Erase "double-peaked." Parnassus is double-peaked only in literature, and the epithet arose in late times (Roman), from a confusion of the twin heights of the Phædriades commanding the valley of Delphi, and the distant mountain summit. — *S.* πατροφονεύς, read *mur-*

deter of a father (another's). — *S.* πέπλος. The cut (No. 96) does not represent the Homeric peplus. — *S.* περόνη. Probably this pin was not always a brooch, but was sometimes like the catch-pins used today as sleeve buttons, consisting of a point that sinks into a socket. — *S.* πηδάλιον. It is by no means certain that in the Homeric ship — as in Egyptian ships and in those of later Hellenic times — the rudder was composed of two oars swinging together. All the Homeric references can be explained on the supposition of a single oar with handle attachments (hence, the plural οἰήια,) used as a rudder. — *S.* πηός. This word, as used of Eurylochus (K 441), can hardly mean *brother-in-law*, in spite of the Scholiast. — *S.* σχεδίη. The cross reference to ἁρμονίη and the following explanations are pointless since the cut formerly under ἁρμονίη has been rejected. — *S.* Ὠκεανός. This cut, as several others unprovided with explanations, is unintelligible.

The revision will win for the Homeric Dictionary a prolonged period of usefulness. Homer is, perhaps, the one author to whom the classical student turns in especial fondness in later life. Both editor and reviser have had in mind the wants not only of the young student, but also of the older scholar and of other persons of literary tastes who may wish to read Homer abundantly and swiftly, unencumbered by the learned apparatus of text criticism or commentary. At the hands of all these classes of readers the book deserves and doubtless will receive a cordial welcome.

JOHN H. WRIGHT.

The State Last. A Study of Dr. Bouquillon's Pamphlet, "Education: To Whom does it Belong?" By REV. JAMES CONWAY, S. J. Canisius College, Buffalo, N. Y. New York, Fr. Pustet, 1892. $9\frac{1}{2} \times 6\frac{3}{4}$ in., pp. 116. Paper.

This is a pamphlet of one hundred and sixteen pages, in answer to the recent work of Dr. Bouquillon on "Education by the State." The author manifests in an eminent degree the scholarship that has always characterized the "Society of Jesus." A marked weakness of his argument, however, as far as any immediately practical result in America goes, is the extent to which he relies on European authorities. And yet this was, in all probability, the most effective way to meet and overthrow Dr. Bouquillon's argument, which was founded on the same authorities. It counts, then, as a step in the attempt to unite the Catholics of America on a logical and philosophical claim for the recognition of God and religion in the public schools.

Father Conway denies to the State a monopoly of education; and to this extent, all, outside a little circle of fanatics in and around

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Boston, will go with him. But when he denies to the State the right to establish a standard of education, — fairly and justly agreed upon, — he must part company with the great majority of Americans, whether Catholic, Protestant, or Lutheran.

Two points made by him against Dr. Bouquillon are of undoubted interest and importance.

Dr. Bouquillon had defined education thus: "In a large sense, it is to communicate what we know to one who does not know." Now, accept this idea of education, and compulsory attendance at State regulated schools might not seem so great an outrage after all. But Father Conway stoutly — and properly enough — objects to this definition, and says: "The idea of education is not covered by that of teaching or instructing, much less by the idea of incidental communication of ideas. The salient, the essential feature of education is the training of the human faculties, the building up of the perfect man or woman, the development of human power, the direction of youth in the way it should walk to gain its ends in this life and the life to come." In the light of this correction, which must certainly commend itself to every one, nothing could be more cruel than to take the child from his parent perforce and subject him to a method of character development abhorrent to the parent's sense of right and wrong.

Again, Dr. Bouquillon says: "Among the most necessary means for the attainment of the temporal welfare of the commonwealth is the diffusion of human knowledge." And he makes this one of the bulwarks of his argument in favor of State education. But the author of the pamphlet under review objects that this "proves too much; there is hardly a tenet advocated by socialists or modern social reformers that could not be equally proved by this argument."

The State Last, in spite of its logical clearness and accuracy, will prove disappointing to one who expects to find the same index finger pointing a practical way out of our present confessedly temporary and chaotic condition of elementary education in the United States. Such a work yet remains to be thought out and written; and by whom could it be done better or with more grace than by a member of the order of teachers to which Father Conway belongs? But the writer who undertakes it must remember that the sayings of European churchmen and councils can have but little practical weight in the complication of circumstances that exists in America. The appeal must be founded on reason and experience, warmed with the spirit of Christian charity, and inspired with the most unquestioned loyalty to America. If properly made, with these very just limitations in view, it would no doubt commend itself to the citizens of America.

It must square, on the one side, with the American Constitution; on the other side, it may, fairly enough, claim the latitude of the following typical events, taken from the history of Massachusetts whilst Boston was still "the city of the Hancocks and Adamses": —

1647. "It being one chief project of y^t^ ould deludor, Satan, to keepe men from the knowledge of y^e^ scriptures, as in former times by keeping them in an unknown tongue, so in these latter times by pursuading from y^e^ use of tongues, y^t^ so at least y^e^ true sence and meaning of y^e^ originall might be clouded by false glosses of saint-seeming deceivers, — y^t^ learning may not be buried in y^e^ grave of our fore-fathers in y^e^ church and commonwealth, y^e^ Lord assisting our endeavors." And then with this preface, which sounded the key-note of the New England public-school system, followed the famous enactment of the General Court of Massachusetts compelling towns to establish schools.

1654. The General Court prohibited the teaching of schools "by persons of unsound doctrine."

1785. The "Friends," of Lynn, who had been annually paying for the support of public schools, this year made request to have a portion refunded for the use of their own parochial school. After considerable opposition, the request was granted, and an allowance annually made for some years.

JOHN A. O'KEEFE.

Introductory French Reader. By WILLIAM DWIGHT WHITNEY, Professor of Sanscrit and Comparative Philology and Instructor in Modern Languages in Yale College, and M. P. WHITNEY. New York, Henry Holt & Co., 1891. — $6\frac{3}{4} \times 4\frac{1}{2}$ in., pp. vi, 256. Teacher's price, 70 cts.

This little volume appeals to teachers in many ways. It is neatly bound in strong covers, the type is clear, the notes are at the end of the book, and, in addition to the vocabulary, there is a list of irregular verbs arranged with the five fundamental forms and no more on one line, a method superior to any other.

The first part contains easy fairy tales; the second, somewhat more difficult selections from such authors as Souvestre, Dumas, and Daudet; and the third part has a few short poems.

It seems most excellently arranged in a careful and methodical manner and is one of the best "Readers" we have seen.

HELEN MARSHALL.

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Contes de Fées. Classic Fairy Tales. For Beginners in French. Edited with Notes and Vocabulary by EDWARD S. JOYNES, M. A. Professor of Modern Languages, South Carolina College. Boston, D. C. Heath & Co., 1891 — $7\frac{1}{4} \times 5$ in., pp. v, 147. Paper, price 35 cts.

One of the great secrets of success in teaching is to get the children interested, and, after the few necessary forms in a language are learned, the more they read the better. The charm of such fairy tales as "Puss in Boots," "Little Red Riding Hood," "Hop o' My Thumb," and "Blue Beard" is even greater in the foreign language that is unfolding before the child than in its mother tongue. It is delighted as it reads to find the familiar story in new and curious expressions, and from this familiarity with the story the idioms are the more fully impressed upon the child's memory. This collection of "Classic Fairy Tales" is very happily made from the tales of Charles Perrault, Madame d'Aulnoy, and Madame Leprince de Beaumont. In the introduction there is a short sketch of each of these authors. There is a vocabulary in which the aspirated "h" is marked, also a list of the model irregular verbs. The edition is in paper form, very handy for school use. HELEN MARSHALL.

PUBLICATIONS RECEIVED.

ANALYTICAL INDEX TO BARNARD'S AMERICAN JOURNAL OF EDUCATION. Part I. of a Catalogue of Educational Literature. U. S. Bureau of Education, 1892.

ASHMORE, SIDNEY G. New Edition of Welch and Duffield's Cæsar's Helvetian War. New York, Macmillan & Co.

BLACK, GEORGE ASHTON, and KATHLEEN CARTER. Natural History Lessons. 54 cents. New York, Henry Holt & Co.

BLACK, J. WILLIAM. Maryland's Attitude in the Struggle for Canada. Paper, 50 cents. Baltimore, Johns Hopkins Press.

BROWN UNIVERSITY. President's Annual Report, 1892.

CALDWELL, G. C. Elements of Qualitative and Quantitative Chemical Analysis. Philadelphia, P. Blakiston, Son & Co.

COOK, ALBERT S. The Art of Poetry. Boston, Ginn & Co.

COOK, ALBERT S. The Bible and English Prose Style. 55 cents. Boston, D. C. Heath & Co.

FOUILLÉE, ALFRED. Education from a (French) National Standpoint. Translated by W. J. Greenstreet. Preface by William T. Harris. New York, D. Appleton & Co.

GRANDGENT, C. H. Materials for French Composition, Part V. Paper, 12 cents.

HOWARD SEMINARY, West Bridgewater, Mass. Catalogue, 1892–93.

HYDE, WILLIAM DEWITT. Practical Ethics. New York, Henry Holt & Co.

JONES, E. E. CONSTANCE. An Introduction to General Logic. $1.50. London and New York, Longmans, Green & Co.

JOURNAL OF EDUCATION, THE. Monthly. 7*s.* per year. London, E. C., 86 Fleet Street.

LANG, ANDREW. The Blue Poetry Book. New edition for school use. New York, Longmans, Green & Co.

MATHEWS, HARRIET. Outlines of English Grammar. Boston, D. C. Heath & Co.

PATTON, JACOB HARRIS. Political Economy for American Youth. New York, A. Lovell & Co.

SALTER, WILLIAM MACKINTIRE. First Steps in Philosophy. Chicago, Charles H. Kerr & Co.

SCHOOLMASTER, THE. Weekly. 6*s.* 6*d.* per year. London, E. C., 14 Red Lion Court, Fleet Street.

VON JAGEMANN, H. C. G. Elements of German Syntax. New York, Henry Holt & Co.

RECENT ARTICLES ON SECONDARY AND HIGHER EDUCATION.

July and August, 1892.

Advance of Education in the South. PRESIDENT DABNEY. *Cosmopolitan*, Sept.
Algebra and Geometry in Grammar Schools. *Public School Journal*, July.
American Literature in Colleges. N. M. HALL. *Andover Review*, Aug.
American Students at German Universities. E. E. HALE, Jr. *Boston Commonwealth*, Aug. 6.
An American at Old Oxford's Commencement. *Boston Journal*, July 2.
An Irresponsible Educated Class. HELEN H. GARDNER. *Arena*, Aug.
A Sixteenth Century Scholar, — Geo. Buchanan. G. E. TODD. *Gentleman's Magazine*, July.
A School in Germany. G. Kobbé. *Christian Union*, July 2.
Aristotle, Finding of the Tomb of. C. WALDSTEIN. *Century Magazine*, July.
Assistant Masters and their Salaries. *Journal of Education* (London), Aug.
Beginnings in Botany. B. D. HALSTEAD. *Popular Science Monthly*, Aug.
California State University. ELIZA A. OTIS. *Los Angeles Times*, Aug. 1.
Cambridge Schools. Changes in Curriculum. A. B. HART. *New England Journal of Education*, July 28.
Catholic Colleges, Closing Exercises throughout the Country. *New York Freeman's Journal*, Aug. 6.
Catholic Summer School at New London: *American Catholic News*, July 27; *Boston Pilot*, Aug. 6 and Aug. 20; J. A. MOONEY, *Catholic World*, July; *New London Telegraph*, Aug. 16–20.
Chicago University. *Philadelphia Public Ledger*, July 4 and 5.
Co-Education in German Universities. *Nation*, July 21.
Colby's Commencement. *Waterville Mail*, July 1.
College Library Section of New York Library Association. *Library Journal*, Aug.
College Students and their Ways. *New York Observer*, July 14.
Concerning Higher Education. E. GRACE. *Colorado Sun*, July 10.
Courses and Centers, 1891–92. *University Extension*, July.
Dominion Educational Association. Portraits. *Dominion Illustrated Monthly*, July.
Education for the Colonies. A. MONTEFIORE. *Macmillan's Magazine*, July.
Education in Germany. F. REUTTER. *Westminster Review*, Aug.
Education in the South African Republic. W. F. ANDRIESSEN. *De Gids*, July.
Efficiency of our Schools. *Minneapolis Times*, July 15.
English Public Schools. G. W. FROST. *Chicago Advance*, Aug. 4.
Fryeburg Academy. F. W. DAVIS. *Boston Journal*, July 21 and Aug. 18.
Fryeburg Academy. *Portland Advertiser*, July 12, and Aug. 18.
Geographical Education. M. E. GRANT DUFF. *Educational Review* (London), Aug.
Georgetown College, Commencement at. *Boston Pilot*, July 2.
German Schools. J. T. PRINCE. *St. Louis Post-Dispatch*, July 24.
German Schools. KARL HEINRICH. *Pacific Educational Journal*, Aug.
Grammar School Boy. I. EMILY MIALL. *Journal of Education* (London), Aug.
Grammar School Reforms. J. A. PAGE. *New England Journal of Education*, July 21.
Harrow, The Head-Master of, at Home. *Young Man*, July.
Harvard Summer School. *New York Tribune*, Aug. 1.
Harvard, The Other Side of (The Annex). GRACE L. COOK. *Mid-Continent Magazine*, July.
Higher Education for the Masses. SUSAN CHANNING. *Open Court*, July 28.
Higher Pedagogy. *Boston Transcript*, July 30.
How Students Work Their Way. *New York Sun*, July 3.
How to Learn a Language. PROF. BLACKIE. *Review of Reviews*, Aug.
In the University Mosque. F. J. BLISS. *Independent*, Aug. 18.
Leaves from a Cadet's Life. L. VON FOLGEN. *Schorer's Familienblatt*, Heft 12.
Looking toward Salamis. W. C. LAWTON. *Atlantic Monthly*, July.
Marlowe. JAMES RUSSELL LOWELL. *Harper's Magazine*, July.
Marriage and Education. CORNELIE HUYGENS. *Vragen des Tijds*, July.

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Massachusetts Agricultural College. *Massachusetts Ploughman*, July 2.
Medical School at Marseilles, The. *La Nouvelle Review*, July 15.
Miami College. S. G. McCLURE. *Chicago Post*, July 18.
Military Schools of the United States. W. R. HAMILTON. *Outing*, Aug.
National Educational Association. Proceedings. *Journal of Education*, Aug. 18.
National Union of Teachers. L. STANLEY. *Educational Review* (London), Aug.
Natural Science in the High School Course. R. E. CALL. *Science*, July 1.
New Movement in Education. G. STANLEY HALL. *School Journal*, Aug. 27.
Northwestern University, Great School of Law at. *Chicago Post*, Aug. 9.
One of England's Great Modern Schools. D. SLADEN. *Cosmopolitan*, July.
Opening Doors for Women. M. C. THOMAS. *Boston Transcript*, Aug. 12.
Organization of American Education. W. D. W. HYDE. (Report.) *New England Journal of Education*, July 28.
Organization of Secondary Education. *Educational Review* (London), Aug.
Oriental Education in Burmah. P. HORDERN. *Asiatic Quarterly Review*, July.
Penikese and Wood's Holl. A. P. KNIGHT. *Week*, Aug. 5.
Pensions for Assistant Masters. C. G. GULL. *Educational Review* (London), Aug.
Persians of Æschylus. W. C. LAWTON. *Atlantic Monthly*, Boston.
Phi Beta Kappa Day at Harvard. *Boston Journal*, July 1. Also *Boston Herald*, July 1.
Practical Teaching of Chemistry in Secondary Education. G. MICHAUD. *Scientific American Supplement*, Aug. 20.
Psychology and University Extension. G. S. FULLERTON. *University Extension*, July.
Public High Schools of Finland. L. SCHRÖDER. *Danskeren*, July.
Recent Advances in Astronomy. J. E. GORE. *Victorian Magazine*, July.
Recent Science. PRINCE KRAPOTKIN. *Nineteenth Century*, Aug.
Rugby, The Making of. A. HADDEN. *Christian Union*, Aug. 6.
Russian Universities. C. T. H. WRIGHT. *Scottish Review*, July.
St. Ignatius College, Chicago. *Chicago Post*, Aug. 11.
Schools of San Francisco. F. H. HACKETT. *Californian Illustrated Magazine*, July.
Sketch of a Moravian School. SUSAN D'EVELYN. *Chaperone*, Aug.
Stanford University. *Christian Union*, July 2.
Studies in the Iliad. T. HAYLLAR. *Monthly Packet*, Aug.
Study of Greek and Latin. H. H. CLARK. *Normal Register*, June.
Teacher's Influence in Politics, The. *American Journal of Politics*, Aug.
Teaching of English Composition. *Journal of Education* (London), Aug.
Teaching of Modern and Ancient Languages. H. H. BOYESEN. *Christian Union*, July 2.
Tercentenary of Trinity College, Dublin University: H. S. HERBERT, *New York World*, July 3; J. H. BERNARD, *New York Independent*, Aug. 11; J. H. TWICHELL, *Hartford Courant*, July 30; J. S. S. MACNEILL, *Irish-American*, July 30; KATHERINE TYNAN, *Chicago Herald*, July 25; *Lyceum*, Aug.; *Nation*, July 21; *New York Herald*, July 3; PROF. MAHAFFY, *Nineteenth Century*, July; *Quarterly Review*, July; T. SHERLOCK, *American Catholic News*, July 27.
University at Oxford, Miss. *N. O. Times-Democrat*, July 17.
University Education for Women. *Review of Reviews*, Aug.
University Extension: A New Departure in. *University Extension*, Aug.; At Chautauqua. *New York Tribune*, July 25; In New Jersey. J. B. THOMPSON. *University Extension*, Aug.; Some Aims and Aspects of. J. M. MACFARLANE. *University Extension*, Aug.
University of Chicago. *New York Tribune*, Aug. 7.
University of Michigan. B. F. WOLLMAN. *Jewish Voice*, July 8.
University Schools. *New York World*, July 10.
Wellesley — the College Beautiful. E. S. CRANSON. *Woman's Illustrated World*, July 2.
What Shall School Girls Read? ELIZABETH DAWES. *Educational Review* (London), Aug.
What to Do. (The function of the University). *Boston Transcript*, July 26.
Williams College, Commencement. *New York Observer*, July 7.
Wilson, Sir Daniel. HORATIO HALE. *Critic*, Aug. 20.
Women as Divinity Students. *Christian Register*, July 7.

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